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Using Social Validity to Examine Teacher Perspectives of Positive Behavior Intervention Support Programs: A Quasi-Replication Study

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Support Programs: A Quasi-Replication Study

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ABSTRACT

Using Social Validity to Examine Teacher Perspectives of Positive Behavior
Intervention Support Programs: A Quasi-Replication Study

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This study represents a quasi-replication of Lane et al. (2009) investigation into the psychometric properties of the Primary Intervention Rating Scale (PIRS). This rating scale was designed to assess the social validity of primary to high school level Positive Behavior Support intervention plans completed by academic staff. Lane's results indicated the PIRS was a one-factor measure with strong reliability and structural validity. To substantiate these findings an adapted version of the PIRS was distributed to teachers from one Utah school district. Quantitative data and additional comments were collected from elementary and middle school teachers. The results were computed using a series of statistical analyses including Exploratory and Confirmatory Factor Analysis and Cronbach's Alpha. Teacher comments were used to provide additional feedback and to examine trends. Results confirmed the Lane et al. findings that the PIRS is a one factor measure with strong internal consistency. Results also indicated that the school district's PBS prevention plan was socially valid from the teachers' perspective.

ACKNOWLEDGMENTS

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ABBREVIATIONS

ABC-UBI	Academic, Behavior and Coaching –Utah Behavior Initiative
BYU	Brigham Young University
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
EFA	Exploratory Factor Analysis
M	Mean
MTSS	Multi-Tiered Systems of Support
p	Probability
PBS	Positive Behavior Support
PBIS	Positive Behavior Interventions and Support
PIRS	Primary Intervention Rating Scale
RMSEA	Root Mean Square Error of Approximation
SD	Standard Deviation
SET	School-Wide Evaluation Tool
SWPBIS	School-Wide Positive Behavior Interventions and Support
TAT	Teacher Assistant Team
UMTSS	Utah Multi-Tiered Systems of Support
UPDC	Utah Personnel Development Center
TLI	Tucker-Lewis Index
UN	United Nations

CHAPTER 1

INTRODUCTION

All children have needs, so what makes some of them special, different or at risk? Homogeneously, we are defined as the same; ontogenetically we are all unique and differ greatly. Consequently, when it comes to social and political action children's, social, emotional and learning needs are understood to be very individual. Thus, school-based interventions and programs are implemented to meet these needs with varying degrees of success. International legislation and local policy has established a plethora of democratic rights in relation to children and their schooling. The Declaration of Human Rights (1943), Standard Rules on the Equalization of Opportunities for Persons with Disabilities (United Nations, 1993), the Salamanca Statement (1994), No Child Left Behind (2001) to name a few, have highlighted the rights, entitlement and quality of life that should be established for children.

Thus, academic institutions are obligated to meet the fundamental needs of their learners, including appropriate care and education. The impact of these initiatives permeates down to ground level and provision is made accordingly in the form of educational programs, curricula, interventions and so forth. These initiatives can be incapacitating and detrimental to a child's social, physical, or emotional well-being if they are poorly constructed or inadequately implemented (Mantz, 2007). One of the underlying philosophies of these types of initiative is the moral imperative for individuals to intervene on behalf of learners. However, education is complex, dynamic, competitive, costly and unique to each individual demographic. This renders any intervention or program difficult to construct in terms of making a positive impact on diverse learners (Cohn, 2001).

Finding an effective intervention or program in which schools can meet the educational and social needs of diverse learners and which can be measured effectively has been notoriously difficult. Wolf (1978) proposed that *social validity* is an indicator of social acceptance in regard to a program's effectiveness based on its goals, procedures, and outcomes. This information can then be used to tailor the program to better meet the needs of children. Over recent decades, schools have been inundated with many strategies, interventions, and programs promising to bring about great change and enhance the lives of school children. The range of choice has become a quagmire as academics and researchers wade through experiments and data, and test the validity and merits of these various approaches (McArdel, 2011). However, over a relatively short history, Positive Behavior Interventions and Support (PBIS) have continued to make positive contributions to supporting many children, including those at risk. One of the key strengths of PBIS is the multidisciplinary and multi-component approach employed to reduce the occurrence of challenging behavior in young learners (pbis.org, 2012).

Throughout recent years there has been a great deal of empirical research in support of the efficacy and validity of the PBIS approach. According to Brynes (2008) PBIS has surpassed its original intention by proving to be an effective behavioral management intervention with students challenged by poverty and urban blight. PBIS also emphasizes the use of data collection and analysis to measure treatment fidelity (pbis.org, 2012). The data drawn can be used to inform the decision making process in regards to supporting the progress of children, including those at risk (Sugai, et al., 2009).

Especially in recent years there has been a considerable amount of increased attention given to PBIS (Miramontes, Marchant, Heath, & Fischer, 2011). It stands to reason that a given

intervention should contain a framework, which effectively utilizes the resources available to increase the likelihood of success. This begs the question, how well do schools and researchers solicit feedback from teachers and parents to determine a program's social validity? Some school-based studies suggest there is inadequate attention given to this problem (McArdel, 2011). Marchant and Womack (2010) pointed out two potential problems, if this continues. Firstly, the lack of feedback from stakeholders may obscure how well a program has been accepted. Secondly, the failure to utilize social validation may restrict access to and the quality of these interventions. Social validation then is a means by which researchers can evaluate what the multidisciplinary team, in other words the key stakeholders, deems valuable and applicable to the learner. This is achieved by a focus on the social importance and relevance of the program, its goals, procedures and effects.

The proposed study was part of the ongoing longitudinal investigation of PBIS in the state of Utah. The overall objective of the study was to help evaluate the social validity of PBIS in terms of schools' disciplinary plans. After a series of consultations between faculty members of Brigham Young University (BYU) and the administration in the Iron County School district, it was deemed important to evaluate the social validity of PBIS in that district to gain a better understanding of consumer satisfaction. This was achieved by conducting a quasi-replication study of Lane et al. (2009) which investigated the Primary Intervention Rating Scale (PIRS) used to evaluate the social validity of PBIS programs in Tennessee schools.

Similarly, this study was replicated in one Utah school district using the PIRS as the key instrument. Some of the data gathered via the PIRS will be used to inform school based decision-making in the aforementioned school district. Consequently, this will help the

relevant schools develop a future course of action in relation to PBIS in order to better meet the needs of learners.

What separates this study from Lane et al. (2009) study was the diverse and demographically varied group of respondents. Arguably, the impact of PBIS cannot be truly understood until all the relevant cohorts have had a voice. Studies of PBIS so far have concentrated on school-based data, predominantly from teachers. It was held that teacher feedback would help confirm overall satisfaction with PBIS and the impact it has had on the students. Gathering data from typically underrepresented stakeholders often increases consumer involvement and buy in.

This quasi-replication study was designed fittingly to provide data, which will inform and guide educators to make better informed program decisions. The results from this study will be used to assess and improve PBIS in the Iron County School District. Hence, the study will unearth data related to PBIS, including teacher buy-in, teacher satisfaction with PBIS and teacher perceptions of the impact of PBIS on students. The study findings will be used to improve existing PBIS working practices in the district and inform professional decision-making regarding PBIS. The relevant findings will be shared with the key stakeholders including teachers, and administrators within the school district after the completion of study presenting the strengths, weakness and recommendations for PBIS implementation.

This study will add to and expand the current, but limited growing body of literature coupling social validity with PBIS. Thus, providing valuable data that could be used to build upon or create new research ideas in this field of PBIS. Thus, it will help and expand current knowledge and understanding of the value of social validity in educational research. The data will also be able to provide additional evidence of the validity and reliability of the PIRS in a

different context with a different population. If the PIRS is found to have reliable scores and valid inferences can be drawn from the scores in a different context, it could be used in future studies to inform and help improve practice and decision making in schools which employ PBIS.

Statement of Problem and Purpose

Schools do not exist in a vacuum; they are confronted with wider political, community and social contexts which can be reflected by the prevailing attitudes of those who are situated within them. This wider socio-cultural context can contain valuable insights and experiences that can often be missed by those within the educational system. As these are overlooked, the dynamics of competing and complementary views can be lost due to lack of social validation. According to Epstein and Sheldon (2002) students are often the parents' main source of information about school life. In surveys and field studies involving teacher and parent involvement and input at all school levels their partnerships tend to decline across the grades. However, Epstein and Sheldon observed affluent communities being more pro-active in maintaining family involvement.

Schools in rural areas that are challenged economically are more likely to engage with teachers or parents on negative issues such as behaviors and attendance (Epstein, 1998). Furthermore, families with a single parent or uninvolved father, and those living in rural areas are less involved in their children's schooling on average. Epstein and Sheldon (2002) continued by highlighting the fact that most teachers and administrators would like to engage more effectively with parents and with one another, but have not the time, skills, nor knowledge to build positive and productive practices. This can be described as a *rhetorical rut*, where educators express support for partnerships without taking any decisive action to

demonstrate their support. Thus, if the concept of a homogenous and a non-marginalized education system is to be achieved for all children, then effective interventions are necessary, to enable educational actors to establish positive interactions with parents and other key stakeholders.

Up to the mid-1990s there had been a dearth of attention given to social validity research in schools. Thus, the decisions of professionals to either accept or reject school based interventions, were often without scientific scrutiny in terms of social validation (Kern & Mantz, 2004). Consequently, educational actors were restricted in their ability to provide feedback on the social relevance and efficacy of a given program or intervention. More recently, greater attention has been given to the social validity of programs like PBIS, and, Response to Intervention (RTI). Over time, PBIS has been relatively well accepted by school districts across the US and in some other countries. There is now a significant amount of research that appears to show PBIS is an efficient and empirically validated approach that can be employed to reduce challenging behavior and supplant it with pro-social skills (Carr et al., 2002). However, according to McArdel (2011), there is still a need for a range of cultural, social and academic perspectives of PBIS because to date there were only a few validated measures that assessed teacher attitudes or other belief factors that might influence successful implementation.

Also, Feuerborn and Chinn (2012) maintained that the perceptions of individual teachers and parents influenced their support for and consequently the implementation of PBIS programs. Each person will have a center of interests, from which valuable insights can be drawn and utilized. Epistemologically speaking, each actor superimposes his or her opinions on the process, creating an organized collective knowledge. Social validation is a

means of unearthing both the novice and expert opinion to gain balanced and broad

perspectives, which can be used to improve the efficacy of any given program.

Research Questions

This study examined the psychometric properties of the revised PIRS and empirically

investigated the social validity of PBIS in Iron County School district in Utah. This was

achieved by gathering social validity data through surveys from teachers of elementary

through middle school children. This study gathered valuable data from these key

stakeholders to answer the following questions.

1. How do the psychometric properties of the revised PIRS compare with original PIRS?

2. How do survey results differ across elementary versus middle school?

3. How socially acceptable to the teachers are the school-wide intervention procedures?

4. What are elementary through middle school teachers' perceptions of the

   social significance of their school-wide intervention goals?

5. To what extent do the teachers consider the school-wide intervention plan to be

   beneficial to students?

Positive Behavior Supports and Interventions were first established and funded in Iron

County School district in 1998. In October of 2013 a new level was implemented aimed to

scale- up and sustain the PBIS framework and make it more in depth and specific. The Iron

County School District program (ICSD) utilizes the MTSS framework and works towards

continual school improvement from Pre K and up. This includes, using a systematic school-

wide support process which uses collaborative efforts of families, teachers and administrators.

Thus, the students are supported via problem solving mechanisms and continual progress

monitoring by the multidisciplinary team (ICSD, 2013).

The ICSD program uses a blueprint, which is embedded with the essential components

of the MTSS model (ICSD, 2013). Thus, the program is structured around the three-tiered

MTSS framework and use of PBIS practices. However, each school in the district that uses PBIS

has the autonomy to modify its practices to meet the needs of its students. The needs of each

subject area are tackled through a multi-tiered problem solving mechanism. This approach

includes ongoing research, professional/staff development, data gathering decision making and

team based problem solving efforts within individual schools. A portion of schools funds are set

aside for staff development and staff can opt into this program. There are two components

within this process, which include up to two additional days salary given or a stipend (up to

$200) provided for training after approval by the MTSS team (ICSD).

CHAPTER 2

REVIEW OF LITERATURE

Systems of Support

Approaches such as PBIS sit within the conceptual framework of MTSS (Sugai & Horner, 2009). It has become evident that MTSS is nicely in line with the Common Core Standards because it not only focuses on what needs to be taught, but how and when (Gamm et al., 2012). Through high quality instruction and intervention, the aim of MTSS is to meet the needs of the leaner through school wide systems of practice. As an evidence based approach, MTSS tailors interventions to the student's needs through various data gathering and analysis systems (Mellard & Johnson, 2007). This data driven approach allows problem solving to occur and enables educators to effectively evaluate the functionality, efficacy and impact of their educational system. Thus, MTSS is a means by which educators can examine data on students, with a view to informing school based system change. MTSS employs a three tiered approach; primary or universal, secondary or group level, and tertiary or individualized (Walker et al., 1996). Embedded in the MTSS framework is the use of a collaborative team to inform practice and improve learning outcomes. Since MTSS is an active, non-static model, educators determine which tier is appropriate for a given situation and how it should be utilized. Furthermore, MTSS allows for flexibility of movement between and within each tier in order to adapt to the dynamics of each school and its individual students' needs. The learners are not categorized by these tiers, rather the tiers describe the level of intensity or type of instruction required (Gamm et al., 2012).

An integral element of the MTSS paradigm is the promotion and practice of school based research to inform and encourage system change (National Center on Response to

Intervention, 2010). As a data based problem solving approach MTSS focuses primarily on prevention rather than cure. Thus, the MTSS model is employed for early assessment to determine which students are on track and those that are likely to struggle or fail, enabling pre-emptive intervention to be initiated. One successful method is to accelerate and intensify student progress before issues become problems. Educators identify and define early behavioral expectations and work closely with students to meet these expectations. When implemented with fidelity, MTSS nurtures and combines both academic and socially appropriate behaviors to increase the likelihood of student achievement (Gamm et al., 2012). Sugai and Horner (2009) postulated that approaches such as MTSS are excellent for guiding and improving assessment and intervention decision making. In the final analysis, MTSS is a data driven process used to inform change. Through team effort, students' needs are identified early and responded to quickly and efficiently. The three tiers are used individually/interchangeably to tackle both general and specific school based issues. This is in part achieved by recording regular 'snapshots' within an extensive time frame. Thus, students who experience difficulties can become successful because their individual needs are recognized, monitored and intervened with efficiently over the necessary period of time.

Social Validity

Conceptually speaking, the term social validity means different things to different people, to the extent that these meanings have been used interchangeably across disciplines. In relation to this study, the term social validity will be as defined by Carter (2010, p. 2) "The evaluation of the degree of acceptance for the immediate variables associated with a procedure or program designed to change behaviors." Embedded in this approach is Hawkins' (1991, p. 21) postulate of habilitative validity, which refers "To the extent to which the goals,

procedures, and outcomes of treatment resulted in increasing the benefits and decreasing the costs to the individual and others." Hawkins' framework is driven by research that focuses on associations and the predictive value of measures of consumer satisfaction. The resulting data could be used to predict future consumer behavior such as adherence to treatments, and, recommending treatments to others.

History and background. Around the late1970s, the concept of social validity was introduced by Wolf (1978). He diverted from popular opinion and practice, pushing aside the dominant objective measurement paradigm of the time and focused more on a subjective approach (Adkins, 1997). Wolf (1978) recognized that applied behavior analyses between the years 1968-78 were not hostile to the importance of social feedback, but were unsure how to measure it effectively (Adkins, 1997). Subsequently, social validity was accepted by applied behavior analysts as a measure for the social impact of an intervention or program. This attributed to the move from the dominant single subject research design, to a more group based research design and self-reported data. Social validity was initially associated with the social desirability and utility of programs and their impact on behavior in the field of medicine and associated fields. Wolf drew from three core principles of judgment to drive his approach, (a) goals that are in line with societal desires, (b) socially appropriate procedures, and (c) consumer satisfaction (Adkins, 1997). Significantly, social validity surpassed its original impetus and advanced beyond the behavioral analyst paradigm, becoming more sensitive to the wider social context (Kennedy, 1992).

Over the last few decades social validity has evolved as a part of the behavior analytical approach, to the point that it has been employed in diverse social contexts, including business, commercial and educational settings (Kennedy, 1992). Kennedy described the

importance of social validity as a means to determine if a process or change in behavior is socially valuable and acceptable. Thus, the process of social validity could simply be described as the validation of a product or program, by the user (Gresham & Lopez, 1996). Social validity as a research and program improvement tool appeared to have lost impetus for a significant period of time. A review of applied behavioral analysis articles, between the years 1968-1998 found that only 12% of studies employed social validity research (Carr, Austin, Britton, Kellum, & Bailey, 1999).

Marrying of two concepts. Both social validity and PBIS have their roots in applied behavior analysis, so it seems fitting to marry them in determining if and how a child's needs are to be met. Wolfensberger, (1983) describes PBIS as a principle and ideal of normalization in terms of people with disabilities. He postulates equal opportunities rests most critically on the idea of social role valorization. Those who are in possible dangers of being devalued are supported to gained their rightful social roles and receive an equitable share of existing resources. These ideas postulate a comprehensive lifestyle change for the learner and also the team around them, which can be monitored and assessed effectively to make changes to the intervention on behalf of the learner. Carr (1996) described one of the philosophies of PBIS as humanistic values that do not replace empiricism, but inform it by telling us what is worth changing.

Both PBIS and social validity are concerned with moving away from the laboratory model to a community-based, multi-disciplinary data gathering process which is pragmatic and more effective. Miramontes et al. (2011) noted that programs such as PBIS are structured to be responsive to social validation, because, in part, data comes from complex naturalistic environments associated to the learner. By its very nature PBIS is proactive and data driven,

which allows for in depth data analysis and decision making, geared to research- validated practices. Miramontes et al. (2011) also observed that school-wide positive behavior support programs are swayed by educational actors. Schools are collecting treatment fidelity data to inform decision making, but often neglect social validity data. The author went on to postulate a need for practitioners who are involved in PBIS, to give greater credence and attention to collecting, analyzing, and reporting social validity data to inform practice.

 The need for a holistic perspective. One of the purposes of social validity in education is to provide a strong argument for or against the success of a program. One of the major premises of any school based intervention or treatment is the satisfaction of its recipients and other key stakeholders. Thus, the level of 'buy in' of the relevant individuals, can influence and determine the degree of success of any given intervention or treatment (Miramontes et al., 2011). Often, judgments by these individuals are made in terms of the appropriateness of the program in relation to their own issues, and how well their needs have been met. Stufflebeam (1977) concluded that needs may be determined democratically and program change should be established via a majority decision of the relevant reference group in society. He saw it as an analytical approach where the collective stakeholders come to a judgment about what is required, given the current status. An important part of the social validity framework is to analyze data rather than just assuming that every section of the treatment process accords with the consumers' personal values or the general values of that portion of the community (Foster & Mash, 1999).

 Kazdin (1980), noted that collaborative versus unilateral decision making will influence acceptability of a treatment and what rating individuals give to it. In this way, social validity helps one determine whether treatment acceptability has changed over time, that the treatment

fits, whether it has made a significant change and if it is acceptable to the respondents. According to Kazdin (1997) the concept of social validity is to help stakeholders focus on and improve treatment, prevention, rehabilitation, education, and produce change in the behavior and adaptive functioning of its recipients. The goal(s) of a given treatment or intervention can be appraised from the perspective of the key stakeholders in juxtaposition with peripheral others. According to Kern and Mantz (2004), if the goals of an intervention are considered of value by the recipient, then the goals must be considered socially valid. However, behavioral researchers have highlighted that client reported data and observer-obtained data does not always correspond (Wolf, 1978). Social validity measures can be manipulated, abused, misleading, misinterpreted and misunderstood. Thus, conditions must be established in which educational actors and respondents can be the judges of the value of their program, and program results (Wolf,1978).

Kazdin (1980) highlight three reasons for social validity research; (a) to determine acceptability of a program, (b) to ensure ethical and legal procedures are adhered to, (c) and to pin point variables that may strengthen or weaken a treatment in relation to the recipient. Carter (2010) pointed out that these three principles are warranted and have numerous applications and none more important than reducing the intrusiveness and negative impact a treatment may have on the individual.

Social validity also has a wider significance, as those who may otherwise be on the periphery, such as parents, are drawn in to the core of the issue. Thus, the locus of authority is shared by the newcomers and the process is seen as more democratic. One of the aims of social validity is to develop community cohesion and empowerment and in the process, generate diverse values, interests, perspectives and roles as individuals engage in the program

(Carter, 2010). In constructivism this would be similar to Lave and Wegner's (1991) legitimate peripheral communities. Lave and Wegner suggested that this practice provides increased motivation, investment of time, intensified effort, and increased sense of identity within the group. Social validity in education is seen as a means to promote a social/cultural transformation and instigate dialogue concerning comprehensive support for the child. Kazden (1977) postulated a need to acquire global judgments to assist in making normative comparisons through a system of positive interrelationships. Wolf (1978) maintained that social actors were "qualified to make legitimate evaluations and through their subjective feedback, one could determine the social acceptability of the goals, procedures, and outcomes of a program." (pp. 206-207). Thus, the treatment outcomes collated though subjective evaluations can provide quantitative data drawn from qualitative judgments.

     Coherence across respondents. Part of the social validity paradigm is the need for educational actors to move away from the monochromic (rigid or constricted) and embrace a polychromic (flexible and expansive) framework. Crucial to this notion is the re-evaluation by academics of what constitutes a broad and balanced data gathering process. If the intervention sits within a therapeutic framework, it needs to be constructed with real, relevant, achievable and child centered data (Bayliss, 1999). Bayliss (1999) referred to this as 'coherence across respondents' suggesting that all relevant parties are to be consulted and their opinions valued. For example, if a satisfaction survey for classroom management was conducted and it yielded negative results, adjustments could be made via suggestions from all relevant individuals. Bayliss warned academics to be cautious about giving respondents hierarchal positions during the data gathering process. He suggested that this can create barriers rather than supporting teachers and parents and concluded that these barriers can narrow the parameters

of the data gathering process instead of unearthing the plethora of valuable data out there.

He saw all respondents as sitting on a linear continuum, all are equal, but are seated

different distances from the child, thus having their own unique perspective. Thus, social

validity is not preoccupied with the strict adherence to an assigned or traditional approach

per se, but focuses on the critical and supporting views of the key stakeholders.

According to Rosenberg, Wrestling, and McLeskey (2010), partnership affords

stakeholders the opportunity to share information and observations about the child that could

easily be missed without consultation. However, teachers and parents must be seen as more

than just mere mediators or advocates, but as the true professionals and those who have the

greatest investment in the child. The literature on social validity acknowledges that parents

and teachers are on the front line of their child's development, and that collaborative

engagement between relative parties is essential for program success (Bothe & Richardson,

2011). They continue on the topic of parent and youth engagement in interventions and have

argued "The objective culture or ethos of the institution governs its practices and how these

are portrayed by the school will have educational, cultural and social implications on all that it

does." (Bothe & Richardson, 2011, p. 19).

Community coherence. According to Wolf (1978), verification of the effectiveness of

any intervention strategy should be augmented by confirmation of its social validity. Teachers

and parents also have varying expectations that need to be met; such as good communication,

training, information sharing, and the appropriate methods of safeguarding of children. If

these are not met, there is usually a breakdown of relations and communication, which works

to the detriment of the child. Thus, one of the key elements of social validity is the concept of

community coherence, which establishes an atmosphere of reflection and respect, and values

all the key stakeholders (Rosenberg et al., 2010). Within education, interventions such as

PBIS are seen as a vehicle for developing culturally competent praxis, affirmative action and

promoting the well-being of the child (Robins et al., 2005). Arguably, the social validity of

such a program needs be measured to determine if it meets the needs of the child from all

perspectives.

Within the social validity postulate teacher-parent feedback should be ubiquitous, but

this is not always necessarily so. The plethora of research into school-based interventions

appears to suggest a dissonance that often occurs within many schools and with parents. For

example, Howland, Anderson, Smiley, and Abbott (2006), observed that in school

relationships are usually ignored or underdeveloped, especially in rural areas, because of

financial and demographic constraints or a lack of training and understanding. Epstein's

'Framework of Involvement' discussed the importance of collaborating with the community to

identify and integrate resources and services to strengthen school programs and student

learning and development (Epstein, 1984; 1992).

Environment and context. Determination of whether an intervention or program has

achieved its goal is often assessed purely from the school's perspective. Arguably, you cannot

understand people or a practice without a socio-historical context. Albin, Lucyshyn, Horner,

and Flannery (1996) described this as a '*contextual fit*', suggesting that challenging behaviors

are merely tacit knowing, without familiarity with the wider environmental contexts.

Embedded in the practice of social validity is the idea that there is both an external and internal

world to be investigated, in order to determine the social legitimacy of a situated program.

Every teacher, pupil, parent, administrator etc. constructs their own version of the validity of

the program. By placing all the social constructs and meanings together, the reliability and

validity of the program can be better understood. This is a move away from extant theorizing, to a more meaningful form of objective hermeneutics, exchanging and interpreting information (Oevermann, 1987). Albin et al. (2005) went on to state that a program with high social validity is often representative of meeting the user's needs and also has a high degree of treatment fidelity. Social validity and social relevance are synonymous. Carter (2010) maintained that there will be an interrelationship and interconnectivity of the social validity constructs, including social importance, social relevance, social significance, consumer satisfaction, educational relevance, applied relevance, applied importance, ecological validity, cultural validity, and cultural significance. Miramontes et al. (2011) noted that local and societal needs are complex and thus schools are overwhelmed with plans and strategies to meet the needs of these complexities. The authors went on to highlight that one education program does not fit all and outcomes may vary enormously depending on the demographics, culture and experiences of the recipients.

An understanding of the importance of PBIS and having wider social representations from key stakeholders is essential (Fraser, 1984). The sometimes disparate opinion between the members of the multidisciplinary team in relation to what is best for the child is not a new issue, and there is a need for it to be tackled professionally and effectively on behalf of the child (Petty, 2011). One of the important elements of social validity is drawing from evidence based practice and data to help researchers and academics recognize and deal effectively with any misconceptions, conflicts or diametrically opposing views about a given intervention, such as PBIS (Cook, Tankersley, & Harjusola-Webb, 2008). Barriers to the success of PBIS, such as parent or teacher resistance to change, can be partly overcome by engaging them in the research process. Consequently, social validity research can directly and indirectly reduce

animosity or misunderstanding simply because it focuses on the needs of the child by embracing multiple perspectives. Kazdin (1980, p. 1) maintained that "Social validity alerts us to the issues of the applied value of the intervention, and whether the intervention has had a palpable impact and actually helped people in ways that are evident in everyday life." This is achieved by creating an environment in which teachers, parents and relevant others feel valued; they have an active rather than a passive voice. Because they have a say, their opinions are validated and they feel empowered in their child's education and academic well-being.

Cultural and ecological validity. The literature on social validity points to terms such as educational relevance, ecological validity, and cultural validity to name a few. Albin et al. (1996) recognized that the process, criteria, and measures for evaluating behavioral support programs are in constant associated patterns, which are interpreted, absorbed and acted upon, including; emotions, decisions, attitudes and values. These sorts of patterns contribute to the beliefs, paradigms and expectations of a given intervention. A key feature of social validity research is to place the relevant individuals, programs, concepts, practices or ideas in juxtaposition to determine their relevance and efficacy in the specific cultures and environments associated to the child. According to Robins, Lindsey, Lindsey, and Terrell (2005), learners are in constant flux, creating an ongoing need for ecological, cultural and educational validation of their program, if it is to work successfully. The eco-systemic paradigm describes human beings as organisms interacting culturally, socially and physically with one another (Bayliss, 1999). These interactions can create cultural proficiency, argued Robins et al. (2005) which allows academics the opportunity to view each pupil differently, and respond effectively to their needs in a variety of environments.

Often, the culture of any given school is to try and ensure its institution is run correctly

and in line with top-down directives, mandates and polices. This can lead to a preoccupation by administrators to work primarily within the parameters of the school system, because it can be controlled and organized from within (Epstein, 1984). However, the literature on social validity, notes that parents are on the front line of their child's development, and that collaborative engagement between involved parties is essential for program success (Bothe & Richardson, 2011). Therefore, if negative emergent behaviors or escalating pre-existing ones are observed within the educational setting, parents can be employed as an invaluable resource because of their unique perspective and understanding of their child. Robins et al. (2005) argued for a change in mindset of many administrators and researchers in terms of managing the dynamics of difference, by utilizing valuable parental feedback and opinions in addition to school based data. It has been observed that school based interventions can and often do take the form of the dominant paradigm or philosophy, i.e. religious or social values or opposing teaching approaches such as pedagogy and andragogy (Csapo, 1982; Freire, 2000). Thus, the organizational or cultural rigidity of a school can unintentionally lead to varying degrees of neglect, purely because they fail to consult with parents, teachers and other key people. Social validity is concerned with educational relevance and ecological and cultural validity. Examining the social dimensions can provide a context to better understand the strengths and weaknesses of an intervention and any undesirable or unanticipated effects related to a given group (Hume, Bellini, & Pratt, 2005).

Ethical implications and considerations. The previous section implied that every condition or context in which PBIS is implemented will require its own exclusive, continuing evaluation, particular to the dynamics of that group. Hence, the need for evidenced based practices and data to narrow the knowledge-practice gap and help reduce unintentional negative

impact on the learner. Sugai and Horner (2008a) suggested that interventions should be constructed in ways that are least restrictive and intrusive to the child. They additionally noted that some behaviors are targeted for intervention with little or no forethought for the social relevance, situation, context or social skills of the student. Thus, one should consider, even though the intervention may change behavior, what dangers or harm may be associated with it. In a similar way to iatrogenic damage, school based interventions can be either the vaccine or virus to the learner's future. Ethically and morally it is the responsibility of the multi-disciplinary team around the child to get it right, to do "good" and ensure that the intervention is mostly seen as positive (Skinner, 1975). Consequently, social validity must reflect the values and ethics of a society and protect those most vulnerable. As Adkins (1997) described, social validity cannot fully answer and deal with all the ethical dimensions of a behavioral intervention. However, it can ensure that the intervention is in closer harmony with societal values, rather than simply drawing from the general opinions of disconnected experts. It therefore offers a degree of supervision and restraint over the interventions, policies and practices. From the behaviorist perspective, during social validation, ethical professionalism and appropriate contingencies should be in place. This will help ensure the conduct of researchers is appropriate, and protection of consumers is ensured (Carter, 2010). In conclusion, Adkins describes social validity as a mechanism for checking an organization's ethical guidelines and as a measurement of an intervention's ethical practice.

Social Validity in Depth

This next section will review social validity in greater detail, discussing issues such as using it as a measurement tool and, and as a democratic process of inclusion for key stakeholders.

Social validation: A measurement tool. It has been suggested by scholars that social validity can be assessed at three levels: (a) social importance, (b) social appropriateness and (c) social satisfaction (Gresham, & Lopez, 1996). Throughout the process, one should check the content validity of the tool one is using to ensure the right questions are being asked of the right people. Foster and Mash (1999) were concerned with the inclusion of multiple informants, because from a conceptual standpoint, each has a unique viewpoint, and therefore the combined data is not a parallel form of the same measure. However, they argued that inter-informant disagreement is not problematic, because various perspectives are not measurement errors, if they are examined individually. They maintained that not all stakeholders have equal power in the treatment process, however social validity affords them empowerment and responsibility, often leading to greater participation and acceptance. Foster and Mash concluded that consumer satisfaction measures should be subjected to psychometric scrutiny which may include, test-retest reliability, internal consistency and convergent and discriminant validity. Throughout the measurement process, this has a "number of methodological advantages in terms of teasing out associations due to shared method (or informant) variance" (Foster & Mash, 1999, p. 13).

Social validity should be assessed pre and post intervention to have comparable data; however investigators tend to use only the latter approach (Lane & Beebe-Frankenberger, 2003). Social validation is the measurement of informational social influence from respondents who interact with a given program or intervention. The measure is a reflection of their engagement and interaction with its goals, structure and outcomes. According to Carr et al. (2002) the critical features of PBIS can be measured through the lens of social validity. Thus, social validation can be used to help reduce, and ultimately eliminate guess work and ambiguity in regard to program success (Carter, 2010). An effective social validation

measurement occurs via holistic data gathering from the periphery, and the core of the respondents' experiences. These measures could include; meta narratives, surveys, interviews, direct observations, social comparisons and data embedded in and arising from individual education plans (IEPs), and support and strategy plans (Albin et al., 1996; Lane & Frankenberger, 2003). Carter (2010) suggested additional measurement methods including; consumer comments, inventory sheets, rating scales, mixed- item forms, treatment efficacy, and generalizations. Lane and Frankenberger (2003) recommended that a multi-informant approach also be used in gathering consensus-based data to determine the extent or degree of correlation between pre and post intervention data. High social validity suggests that a program is sensitive to and conscious of the needs of the respondents and vice-versa. Thus, investigators are searching for a significant, positive relationship between social validity, and treatment integrity, when examining school based data. If the intervention is user friendly, then consumers can advise, give feedback and provide valuable data to improve program validity. Schwartz and Baer (1991, p. 22) suggested the following as ways to improve the measurement of the social validity of an intervention:

1. Expand the definition of consumers to affect a program's survival

2. Enlarge the psychometric exactitude of social validity assessments

3. Extend assessment to heretofore underrepresented populations

4. Implement widespread application of the social validity assessments

5. Increase, significantly, consumer involvement in the planning and evaluation

6. Educate consumers to make better informed program related decisions.

According to Messick (1995), data based decision making is grounded in the concept of consequential validity and applies to treatment. The value of treatment is measured by both

positive and negative effects and intended and unintended consequences of its use by the consumer. As a measurement tool, social validation looks at the match between treatment fidelity and social fidelity. The correlated data from these identifies the degree of relationship between the two. Thus, social validation becomes a means of reciprocal dialogue, which can be measured as an active construct, a way of sharing information that may not have been considered by others. As social validation is employed, the predictors of social acceptance and program success can be investigated from the periphery and the core of the educational actor's position. Interpreting social validity data can include Treatment Evaluation Inventories (TEI), Treatment Acceptability Rating Profiles (TAP), and Intervention Rating Profiles (IRP). These instruments are used for comparing and contrasting positive, neutral and negative responses by respondents and cross validating these responses between parents, teachers and students (Messick, 1995). A key theme of social validity research is a measurement process that utilizes data gathering from eco- systemic structures, including the school and home.

Social validity and causality. During any form of research we are faced with fallible human judgments and so we can never be truly certain what caused something to occur. We often perceive that X caused Y from our perspective of the existing conditions, which leads us to draw conclusions about causal relationships (Shadish, Cook, & Campbell, 2001). Yet how well founded and factual are these statements? Often causal statements are made in a particular context or by placing them in a causal field or condition, which leads us to make certain assumptions (Mackie, 1980). In educational settings, one might presume that a certain program or intervention caused a behavior to change, with little scrutiny of its physical, cultural, or historical context. However, the intervention may be what Mackie (1980, p. 354) described as an inus condition or "an insufficient but non-redundant part of an unnecessary but

sufficient condition." Paraphrasing Shadish et al. (2001) in other words, the intervention was not the main condition, nor contributed largely to the change. However, it had some small impact and the change would not have occurred without it. By drawing a range of data from numerous respondents in different social contexts, social validity addresses this issue by determining causal relationships under their certain conditions. Thus, in PBIS philosophy, educational actors are seen as essential functioning partners, experts, and collaborators and not just mere helpers in a contextual environment. The ubiquitous data they offer is used to draw up a map of experiences and help determine causal relationships related to the intervention.

Social validity is one of the means by which claims/inferences can be made, since its approach reflects the praxis of communicative action through dialogue. Schwartz and Baer (1991) postulated that one of the tools of social validity assessment is to promote the survival of, avoid the use of, and/or to discontinue the use of a given program. Furthermore, social validity is a means of identifying the individual parts of an intervention that work and those that do not.

According to Bayliss (1999) the ecological learning environment is conceived of as a set of nested structures, each one inside the next. At the core is the immediate setting of the developing child, usually home or school. Bayliss noted that social validity testing of these settings can add to the web of data to determine if it is the intervention or some other phenomena that is causing any changes. He maintained that changes go beyond the mere child, and one must be concerned with the counter-factual, because of the interrelationship that occurs between the child, their environment, larger social contexts and other external factors. Bayliss was concerned with any dichotomies that may be apparent and the need to ensure that all variables related to an intervention are considered before making any changes to it. He

concluded that social validity is concerned with both the artificial (presumptions, guesswork, and misinterpretations) and the natural (measured, evaluated and discussed) domains of data.

      Social validity as a democratic process. Social validity could be described as the democratic practice of inclusion, as it gives diverse informants a voice that can be heard. According to numerous authors, social validity is a means to empowerment, confidence and greater unity between members of a multidisciplinary team and gives greater validity and influence to interventions such as PBIS and RTI (Baker & Soden, 1997; Catsambis, 1998; Epstein & Sanders, 2000).

      A great deal of scholarly literature on PBIS has described its history, context, benchmarks, functions, ergonomics, design, parameters, strengths and weakness. However, little attention has been given to its social validity in terms of parent and teacher perspectives. McArdel (2011) maintained that a need exists for a range of cultural, social and academic perspectives and both parent, and teacher views on the implementation and understanding of PBIS. According to McArdel (2011, p. 5) in regard to PBIS "To date, there are no validated measures that assess teacher attitudes or other belief factors that might influence successful implementation." Marchant and Womack (2010) raised the point that the social validity of PBIS is partly dependent on the degree of proprietorship teachers, and other stakeholders acquire. Thus, if one wants to increase the likelihood of success, those involved need to believe it is of worth and that as stakeholders they have some degree of control and ownership over the intervention.

      According to Turan and Meadan (2011), social validity conceptually embraces the principle to determine whether an intervention has had significant and reliable effects upon the child from different perspectives. Their findings suggest that educational research must go beyond the ergonomics, constraints and boundaries of the child, but within the school system.

Professionalizing the amateur perspective. With any educational intervention, one must be concerned with issues such as bias and the quality assurance of data. This is even more imperative when data is gathered from a singular or narrow perspective. Moscovici (1983) advocated that research into complex social issues may be limited since it can miss the common sense knowledge that the apparent layperson such as the student, parent or teacher holds. The lay perspective can allow for examination of a complex social issue from multiple perspectives rather than a vague proto understanding. By having variety, social representations can make conventional objects, programs, persons and events more understandable and can inform change. Gaining knowledge from the layperson, according to Moscovici, can assist in resolving or coming to a better understanding of the competing elements and/or contradictions within a system.

Within social studies literature there is often a reference to social representation and a need for multiple perspectives (Carter, 2010). Einarsen (1998) also concluded that the layperson is not a passive receiver, but an active interpreter of ambiguous and real stimuli. He went on to postulate that the whole social structure or culture at large has a valuable perspective to offer. He therefore suggested a need to critique the amateur perspective, since people have their own ways of making sense of a situation.

The aforementioned opinions are mirrored in Moscovici's (1983, p. 26) theory that "The lay person holds knowledge in the form of common-sense theories about all aspects of life and society." In other words, both Einarsen (1998) and Moscovici (1983a) suggested that those dealing directly with social issues should be considered as professionals, yet all too often, scholars tend to neglect this potentially important data stream. Moscovici (1973, p. 1) noted "These social representations enable communication to take place among the members

of a community in which a unique code for social exchange occurs." Calderhead (1996, p. 1) postulated, "This code of naming and classifying various aspects of their world, allows them to make sense of an event, situation or behavior within their domain." Cochran-Smith and Lytle (1999), and Fenstermacher (1994) argued that often, firsthand experience elicits deeper understanding/ knowledge of a situation than observation or study alone. Calderhead (1996) concluded that research has shown personal experiences to elicit meaningful and reasoned narratives, responses and stories to shed new light on a situation. Thus, experience is seen as a mechanism that can stimulate reflective and reflexive thinking and make unforeseen or new connections to social situations (Calderhead, 1996; Cochran-Smith & Lytle, 1999; Fenstermacher 1994). Social representations often inform, reflect, and sometimes reinforce, societal perceptions of certain types of behavior, such as peer victimization. These judgments lead to unsubstantiated conclusions concerning the characteristics and motives of others. People try to understand the world in which they live, inferring and judging differently depending on their personality and past experiences. What is compelling about social validity research is it raises the fundamental axiom, that program success can be falsely rooted in the personal perception of the assessor, rather than drawing from external influences.

Social validity literature warns about making absolute or uncorroborated judgments in relation to an intervention's value and worth. Social validity attempts to treat the amateur perspective as professional, by comparing data gathered from multiple social representations in a shared community or situation. A key ingredient of social validity is that it draws largely from social constructs via those who are involved and have shared feelings, ideas, beliefs, practices and perceptions that may not be fully understood by outsiders (Moscovici, 1983).

Research evaluating social validity is important because it can illuminate new and unknown data in relation to present experience, supporting or contrasting with previous representations and postulates. This allows one to resolve and come to a better understanding of not only the positives, but also any disparity of opinion and/or contradictions in relation to the respective intervention. In their study, Liefooghe and Olafsson (1999) used the Critical Incident Technique in focus groups to support participants in sharing their implicit thoughts and feelings about bullying. Consequently, the participants revealed a number of alternative frameworks to account for bullying-related phenomena. Liefooghe and Olafsson (1999) argued that bullying is not "objective reality," but rather a set of incidents which can be interpreted in different ways. They argued that by studying the alternative repertoire of social representations, constructive solutions to bullying-type incidents can be established.

Providing a socially valid intervention is vital in supporting students to make personal, academic, and socio-emotional gains. According to Lane and Beebe-Frankenberger (2003), when conducting school based research, social validity is preoccupied with the social significance, importance, and acceptability of the intervention. When measuring the social significance of an intervention, one should be concerned about pre intervention and post intervention data.

Embedded in this process is the necessity of reviewing both short and long term consequences of the intervention, since results change over time. Consequently, both the negative and positive social significance of the intervention can be identified and agreed upon. Appropriate adjustments to the intervention can then be made (Lane & Beebe-Frankenberger, 2003).

In terms of social or treatment acceptability, it has been recommended that all the relevant parties, including teachers and parents, agree that the various intervention stages are reasonable, important, relevant, and appropriate for the child. If these components are adhered to there is a higher probability of treatment integrity than if these variables had not been reviewed. Lane and Beebe-Frankenberger (2003) emphasized the significance of understanding the social importance placed on the intervention by key stakeholders. This component is concerned with gathering data to help produce worthwhile outcomes, and making proximal changes directly correlated to participation in the intervention. Proximal effects of the intervention are the directresult of the intervention. Lane and Beebe-Frankenberger (2003) recommended a multi- informant approach, gathering consensus based social validity data to determine the degree of correlation between pre and post intervention data. To ensure success, they considered the teachers integral to the process, because they have first-hand knowledge of a child's behavior and have appropriate academic expectations. Likewise, parents have vital information and experiences with their child that can enhance an intervention. For example, they know how a child responds to praise, rewards and sanctions and what may improve, trigger or worsen behaviors (Esquivel, Carey, & Bonner, 2008).

Social validity in practice: Does it work? Lindo and Elleman's (2010) study on social validation of research into field based reading interventions reviewed studies between the years 2000-2006. After a review of 1160 articles, they concluded that experimental research is rare and that teacher and student feedback is often not reported. Their findings suggested a need for more field based studies into reading research and more student-teacher driven feedback. It also highlights the important role that social validity plays in sustaining best practices. A study undertaken by Brigham Young University (Pieper, 2007) evaluated the

social validity of the Peaceable Schools model, which included PBIS, and had favorable results. Using an open-ended survey, the study concluded that teachers identified evidence of social validity in the matters of social significance, comprehensiveness, relevance, treatment integrity, and social acceptability. It also concluded "While weaknesses were also expressed in the areas of social acceptability, feasibility, and practicality, teachers perceived overall improvement in student's social skills and saw more strengths than weaknesses (Pieper, 2007, p. 1)." The study demonstrated that the Peaceable Schools model was checkered with socially valid evidence, which was employed in meeting the objective of decreasing the need for reactive discipline in the relevant schools.

Howell, Caldarella, Korth, and Young's (2014) study of the social validity of 'praise notes', as part of PBIS in an elementary school, from a number or perspectives including teachers, resulted in positive feedback. The notes were found to be valuable in improving behavior at school and home. Interestingly, the study discovered that most teachers did not realize that parents put so much value on the praise notes. These studies lead to recommendations of increased use of praise notes, and greater teacher-family communication. According to Papalia-Berardi and Hall (2007) several empirical studies have been undertaken to determine the social validity of Teacher Assistance Team (TAT) services. Results suggested that teachers were only slightly satisfied with the purposes of TAT and respondents views ranged from neutral to dissatisfied with the overall TAT process and outcomes. The findings of these studies resulted in recommendations that lead to significant changes to TAT. From these U.S. studies we can glimpse some of the advantages of employing social validity research.

Going beyond the U.S. demographic, we can examine whether social validation has worked with different school and cultural dynamics Olweus (1997) work on creating anti-

bullying programs has generated interest and prestige in many Nordic countries and beyond. Research has shown that the Olweus Anti-Bullying intervention utilized in Norwegian schools has been highly successful in reducing existing bullying problems among students, preventing the development of new bullying issues, and achieving better peer relations at school (Olweus, 1997). An integral part of Olweus' approach is drawing socially valid data from the key informants rather than going to theoretical text alone. Embedded in Olweus's (2004) prevention program was the use of the child's perspective to assist in understanding and constructing interventions, with the intent to reduce bullying in schools. His program was carefully evaluated in a large-scale project involving 2,500 students from 42 schools, followed over a period of two and a half years. In the late 1990s Olweus's program was refined and expanded, and results from five additional large-scale projects in Norway gave positive results, including a reduction of actual bullying incidents (Limber 2004). Statistics from his work showed; a 50% reduction in reports of being bullied, reductions in student reports of general antisocial behavior, improvements in the classroom social climate, improved order and discipline and improved positive social relationships (Bullying Statistics, 2011; Limber, 2006).

The Tennessee study. The research of Lane et al. (2009) assessed the social validity of school wide PBIS plans in Tennessee. Embedded in this study was evidence for the reliability of scores from an adapted 15 item survey titled the Intervention Rating Profile 15 (IRP-15). The modified survey is known as the Primary Intervention Rating Scale (PIRS) containing 17 items. The PIRS uses a six level Likert scale with anchors that range from 1 (strongly disagree) to 6 (strongly agree). The survey was constructed to measure faculty's perceptions of the social validity of Tennessee's primary intervention plan. There were 617 teacher

respondents, from 11 elementary, 3 middle and 5 high schools, which had participated in a year-long teacher training program associated with PBIS. More specifically, the scale was used to assess teacher's perceptions of the social validity of the intervention, before its launch. The teachers who participated were predominantly female and all participants completed the survey anonymously. Findings concluded, that the level of teaching experience at elementary was 13.41 (SD=9.67), middle 12.78 (SD=9.75), and at secondary schools 11.42 (SD=9.93). Of the 19 schools that participated in the years PBIS training, 14 went on to implement the PBIS plan.

The structure of the PIRS for each school level was measured with an exploratory factor analysis, with 17 items using squared multiple correlations as the previous communality estimates. This was followed by an internal consistency estimate for every school level PIRS form by computing alpha coefficients for all teachers that completed the survey. After examining data at school-site level, there was evidence of a positive relationship between treatment integrity and social validity. Three factor analyses were completed and one factor was retained, explaining 70% of the variance at all school levels. Results suggested, across all the educational settings, that the PIRS is a one factor instrument with high internal consistency and utility (Lane et al.,

2009). A Pearson's correlation coefficient was conducted between school mean PIRS and treatment integrity scores for the schools participating in a program evaluation study. Results were .71, p=.005, suggesting a significant positive correlation between social validity and treatment integrity.

Due to the limitations of their study, Lane et al. (2009) put forward a series of suggestions for future replications of their study, these included:

1. Assessing more ethnically and economically diverse populations from different regions.

2. Additional measures of the PIRS at different time intervals (up to three years) to capture any shift in the perceptions of social validity related to the primary prevention plan.

3. Assessing the social validity of the PIRS further, using teachers who are considered key stakeholders.

All three of the aforementioned recommendations were addressed in the current study.

Summary

In summary, PBIS has been touted as an effective approach to meeting the needs of those with emotional disorders, mental health issues, and behavioral challenges (Bazelon, 2014). Part of the PBIS process is to use a multidisciplinary approach to establish practices and networks that aim to promote cooperation, communication, and to deal with issues such as changing challenging behaviors and poor attendance. However, when attempting to improve the viability of an intervention such as PBIS, one must take into consideration the dynamics between theory, research, and practice. Carnine (1997) and Kern and Manz (2004) maintained that educational research often takes a top-down approach which leaves some disconnect between research and practice. Kazdin (1980), discussing the acceptability and importance of clinical treatment goals, procedures, and outcomes, suggested that various aspects of the social validity of interventions can be employed to narrow the gap between research information and practice needs.

Miramontes et al. (2011) noted that social validity provides a means to bridge the gap between research and practice by addressing the needs and assumptions, both the pros and cons, of the relevant respondents. Accordingly, PBIS is constructed to be a proactive rather

than a reactive data gathering instrument, which draws information from a system of collaborative support networks. Its framework is designed to start with an instructional analysis of the problem, followed by research based data to inform and support change (Darch & Kame'enui, 2004). If PBIS is to be deemed viable as an approach to supporting children with behavioral issues then the stakeholders should have a venue in which to voice their perspective. The current study measured the psychometric properties of the revised PIRS and empirically investigated the social validity of PBIS as implemented in the Iron County School District in Utah.

CHAPTER 3

METHOD

Context

The current study was an extension of recent research evaluating the impact of PBIS in Utah public schools by Miramontes, Marchant, Heath and Fischer (2011). The initial study that was conducted during the 2011-2012 school year used an expanded version of an original statewide survey that was administered in 2010. A second survey was administered online at the end of 2011-2012 academic year to more than 200 stakeholders in schools across the state of Utah that had been involved in implementing ABC-UBI's program. The aim of the ABC-UBI initiative was to routinely evaluate treatment fidelity by using the School-wide Evaluation Tool (SET) to assess individual schools' yearly progression. Schools receive a score ranging between 0 – 100 on seven distinct indicators: (a) expectations defined, (b) behavioral expectations taught, (c) acknowledgment procedures, (d) correction procedures, (e) monitoring and evaluation, (f) management, and (g) district and state level support (Roundy, 2013). Next, an overall SET score was obtained for each school by averaging the data from the seven indicators to determine treatment fidelity. Results indicated a generally positive relationship between treatment fidelity and social validity (Miramontes et al., 2011).

The current study represents a continuing collaboration between BYU and the Iron County School District. The ICSD PBIS program employs a systematic school wide approach including ongoing collaboration between teachers, administrators, families and relevant others to improve student behaviors. The ISCD evaluates each student's needs individually with consistent monitoring and ongoing problem solving efforts. Each school in the district employs its own variation of the ICSD model in relation to student's needs. Embedded in the

program is a focus on classroom management, instructional strategies, ongoing research, staff

development, problem solving strategies and pedagogical skills training. Data were solicited

from all elementary to middle schools in the school district. Note: parent ratings were not

included since the school district at the time of this study did not have an effective system or

network in which to allow the researchers to gather such data successfully and efficiently. Also

treatment fidelity data were not available or accessible at the time of study due to lack of data

and resources to provide the study with the relevant information.

Research Design

This study employed a non-experimental design in the form of survey research. This

design was a quasi-replication of the Lane et al. (2009) research framework aimed to

statistically examine the psychometric properties of the PIRS. A replication study entails

repeating a study using the same/similar methods but with different participants. In contrast to

the work of Lane et al. (pre-implementation of PBIS) this study gathered data on perspectives

of PBIS post implementation. Quantitative findings were supported with qualitative data in

the form of teachers' comments. Included in this study was the use of teachers who work in

the Iron County school district in the State of Utah. The PIRS survey was adapted to the

perspective of the respondents and distributed to teachers.

Quasi-replications have been described as imitative or acquisitive investigations used

to determine if consistent patterns emerge across studies (Gangestad & Thornhill, 1999). The

replication of a study can empirically support the results of the original study or give credence

to a new one by extending generalizability and working through mistakes, recommendations or

weakness of the original. Thus, both studies can be placed in juxtaposition to strengthen

findings such as corresponding or diametrically opposing results. Hence, quasi-replications

can be used as a means of assuring the reliability and validity of either study. In line with the Lane et al. (2009) research, a series of statistical analyses were conducted including an Exploratory Factor Analysis (EFA) and an internal consistency measure using both Cronbach's alpha and Raykov's rho. A new element that was not in Lane's study used to substantiate findings further included Confirmatory Factor Analysis (CFA).

Setting

Though a random sample of schools would have been preferable, it was impractical for this study, due to the limited number of viable schools. This study was conducted in Iron County School District. The district has a total of nineteen schools, situated in both rural and urban areas. This includes 9 elementary, 2 middle schools that were used in this study. Further demographic information for the relevant schools can be seen in Tables 1 and 2 below, which describe the proficiency scores and social economic status for each school in 2013–14 (Proximityone, 2015).

Fourteen schools in the district were implementing PBIS and 11 of these were used in this study. The three not included in the study were the pre-schools that were only in the introductory stage of PBIS implementation. None of the high schools in the district were implementing PBIS at the time of the study. The school district has approximately 9,474 students (Proximityone, 2015) from diverse ethnic backgrounds which are predominantly Caucasian (90%), followed by Hispanic/ Latinos (6.1%), Asians (2.4%) and African Americans (1.7%).

Many of these schools offer dual language immersion programs. All the PBIS schools have been implemented the intervention into their school wide disciplinary plan for two years or more. These schools reflect what the literature describes as institutions where the implementation of PBIS is of great worth (Sugai & Horner, 2008b).

The relevant schools were identified and recruited after a consultation between the primary investigator, BYU faculty and the district administrators. The presiding principal of each participating school approved the study. Each school was deemed appropriate by the primary investigator, BYU faculty and Iron County school district leadership according to their relevance in terms of engagement with PBIS initiatives. This study gathered data from elementary to middle schools, which represented the diverse demographics across geographical locations within the school district (see Tables 1 and 2)

Table 1

Iron County School District SAGE Results: Proficiency Scores by Percentage (2013-2014)

School name	Language Arts proficient	Mathematics percent proficient	Science percent proficient
Cedar Middle School	46	44	51
Canyon View Middle School	40	36	48
East Elementary	37	45	44
Enoch Elementary	49	55	48
Escalante Valley Elementary	57	58	54
Fiddlers Canyon Elementary	48	48	59
Iron Springs Elementary	43	56	49
North Elementary	32	40	45
Parowan Elementary	44	60	56
South Elementary	43	55	57
Three Peaks Elementary	42	54	46

Table 2

Percentage of Economically Disadvantaged Students by School in the Iron County School District (2013–2014)

School name	Percentage of students
Cedar Middle School	45.8
Canyon View Middle School	53.6
East Elementary	69.0
Enoch Elementary	54.3
Escalante Valley Elementary	82.0
Fiddlers Canyon Elementary	52.9
Iron Springs Elementary	45.9
North Elementary	60.2
Parowan Elementary	48.8
South Elementary	35.3
Three Peaks Elementary	58.9

Participants

This study utilized a convenience sample of teachers, a group often underrepresented in this area of study (McArdel, 2011). Based on the demographics of the school district, the teachers worked with a range of students that came from poor socio-economic, education backgrounds to middle-income, degree-educated families. This aligned with the literature, which postulates that PBIS implemented into schools can benefit impoverished and academically challenged groups of society (Flynt, 2008). The respondents were teachers of

the children who were enrolled in the relevant elementary and middle schools within the Iron

County School District, in which PBIS had already been implemented. The schools were

selected because of their suitability for a social validity study, availability, and demographic

appropriateness (Laerd, 2013). The sample of teachers consisted of males and females from

varied ethnic backgrounds, which were predominantly Spanish and English speakers.

The sample of teachers in this study came from all teaching disciplines and different

lengths of experience. These teachers were primarily general educators that had gained a

teaching qualification and a minimum of a bachelor's degree. Both male and females from

all relevant age groups and ethnic persuasions were invited to participate. See Tables 3 and 4

in the results section for specific demographics on study participants.

Instrument

This study utilized an adapted version of the 17-item PIRS Likert type survey

constructed specifically by Lane et al. (2009) to assess the social validity of PBIS plans (See

Appendices A and B). The questionnaire was constructed using Qualtrics, an online survey

engine. Completion of the survey in paper and pencil format was considered likely to receive a

better response rate.

However after deliberation with the school district administrators, they felt this was

inappropriate due to time restrictions, disruption to teaching, and difficultly of distribution

and completion by teachers. The 17 items were initially constructed by Lane et al. to be in the

future tense; however these were altered to the past tense, since the schools had already

implemented PBIS into their school program. Each questionnaire contained items that had

been adapted specifically for the teachers. The items reflected the terminology that

specifically denotes PBIS for its associated school. In line with the original study, a six-point

Likert scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*) was used. Embedded at the start of the questionnaire was a short demographic section, used to gain insights into the makeup of the respondent group. Also teachers were given opportunity to add further remarks in a comments section embedded at the end of the questionnaire.

Procedures

During the spring semester of 2015 an email message was distributed to all teachers in the district, informing them of the upcoming social validity survey. The email highlighted the outline and aim of the study, and the expectations and rights for the participants. In the last month of the academic year, the surveys were distributed electronically to the teachers of the selected schools. The online survey was distributed two weeks before the end of spring semester and closed two weeks after the semester ended. The district superintendent sent two follow up emails during the data gathering process to all teachers encouraging participation in the survey.

Respondents were asked to rate their opinions of PBIS using the adapted PIRS and complete the questionnaire directly through Qualtrics. This allowed for the recording, analysis and security of data. Respondents were asked to indicate their level of agreement with each item. Also respondents were provided with a consent form which they were required to read and complete before they completed the questionnaire (See Appendix D). Note: to be consumer friendly, each individual school adopts its own specific terminology to represent their school- wide intervention and these terms were used in the survey.

Analyses

The analysis of the survey data was conducted using a series of statistical procedures, mirroring the Lane et al. (2009) study. Initially, an Exploratory Factor

Analysis (EFA) was conducted using the maximum likelihood estimation procedure. In contrast to Lane's study a CFA was also run to further validate findings. Lastly an estimate of reliability (internal consistency) among the survey elements for the teachers' responses was computed using Cronbach's alpha and Raykov's rho. Each of the research questions were addressed using data from the surveys; this also included, the qualitative responses drawn out of the comments section of the questionnaire. All data entry was reviewed for accuracy and reliability of entry for 100% of the surveys, with reliability >99%, by one BYU faculty member and an independent research assistant.

Exploratory factor analysis. The EFA was conducted to explore the factor structure of the teachers' responses to the PIRS and to identify how many factors were present and which items appeared to load on which factors (Suhr, 2003). Since there were only six response categories associated with each item, the responses to the various items were not likely to be normally distributed. Consequently, the categorical option in the Mplus software was used to perform the EFA, using maximum likelihood estimator which assumes multivariate normality (Indiana State University, 2006-2008). The GEOMIN procedure was used to perform an oblique rotation of the extracted factors in order to obtain a parsimonious, interpretable and simplified structure (Brown, 2009). The results from the EFA permitted us to develop a testable model specifying how many factors are presumed to underlie teachers' responses to the 17 PIRS items and which items load on which factors.

Confirmatory factor analysis. Having completed the exploratory factor analysis, a confirmatory factor analysis (CFA) was used to statistically test the hypothesized factor structure obtained from the EFA. CFA permitted us to directly test the assertion that the 17 PIRS items are unidimensional as claimed by the original authors (Lane et al., 2009). CFA

also enabled us to estimate the error variance for each item and to detect any item pairs that have correlated errors. The goodness of fit or overall adequacy of the hypothesized measurement model was assessed using the Tucker-Lewis Index (TLI), the Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). Lane et al. used a criterion of at least .90 for acceptable fit using the TLI and CFI. However we used Hu and Bentler (1999) recommendation of .95 for its greater sensitivity. RMSEA values .08 were used as an indicator of acceptable fit.

Estimated reliability. The reliability of the teachers' responses to the PIRS items was estimated using Cronbach's alpha coefficient. Cronbach's alpha coefficient alone would be appropriate if there were no correlated errors with the items. However, because there were a series of correlated errors Raykov's rho coefficients was also employed (Trochim, 2006). According to Trochim, Raykov's rho should be used in this situation because Cronbach's can either over or underestimate loadings.

To address demographic data SPSS software was used to run a series of statistical analysis. This included a frequency table to determine degree of teacher satisfaction and an independent samples *t*-test to determine differences in responses between elementary and middle school teachers.

Qualitative analysis. Qualitative methods were used to analysis the teacher's comments that were collected. The comments were reviewed by a second member of the research team for consistency of findings. A basic content analysis was used to develop categories from the themes that had emerged (Liamputtong, 2009). Content analysis is a flexible method of analyzing text and can be employed through three specific approaches: conventional, directed, or summative (Cavanagh, 1997). We employed the latter summative to

analysis the teacher's responses. The summative approach is an interpret exercise to gain meaning from the content of data: According to Cavanagh, this is achieved by counting and making comparisons of the key words, phrases or themes embedded in the teacher's comments. The themes had drawn were determined by what the teachers had commented about the most. The themes with the highest number of comments were considered the most meaningful/central for the study. This allowed us to examine how themes relate to each other and the range of any emotive issues. The respondents comments were organized into four separate categories positive, negative, neutral support for the PBIS initiative and teacher suggestions. Also a few of the lesser comments that were deemed meaningful by both of reviewers on the research team were extracted and reviewed.

CHAPTER 4

RESULTS

Demographic Information

We received responses from all of the 11 schools designated for the study (100%). On the closing of the survey 170 teacher responses were recorded, from a possible population of 296.

There was a yield of 153 (53%) fully completed questionnaires and the remainder were partially completed. Of the 170 respondents 117 (68%) were elementary and 53 (32%) were middle school teachers. Of the 153 fully completed surveys, 109 were from elementary school (71%) and 44 were from middle school teachers (29%). Table 3 shows a breakdown of teacher responses school by school. Also teachers provided 36 additional comments in regard to their PBIS program.

The gender composition for the respondents was 110 (69%) females and 43 males (31%). Of the 296 teachers in the Iron County School District, 252 (85%) were Caucasian and 44 (15%) were from a variety of ethnic minority backgrounds. Caucasians represented the majority (75%) of the total teacher responses, followed by Hispanic/Latino teachers (9%) and both Asian and Pacific Islanders were (5%) each (see Table 3).

General educators were the majority of teachers with 110 responses (71%), followed by special educators 26 (17%) and those that teach both general and special education. A self-report by respondents in terms of how long they have been a qualified teacher is shown in. Teachers had the option to choose between 0 (less than one year) to 10 years or more. Responses ranged from 1 year with 2 responses (1%) to 10 years or more with 76 responses (49%). The overall teaching experience of the group $M = 7.38,$ and had a $SD = 3.03$

Table 3

Response Rates by School

Name of the school	Number of teachers responding	Total number of teachers	Response percentage
Cedar Middle School	26	46	57
Canyon View Middle	24	43	56
East Elementary	16	29	55
Enoch Elementary	16	27	59
Escalante Valley Elementary	6	7	86
Fiddlers Canyon Elementary	16	25	64
Iron Springs Elementary	14	32	44
North Elementary	12	17	71
Parowan Elementary	12	19	63
South Elementary	11	23	48
Three Peaks Elementary	17	28	61

The majority of teachers were qualified at the Bachelor's degree level with 109 (71%) responses: Next were 29 (18%) teacher responses with a Masters degree (see Table 4). The following item responses define how long each teacher had been using the PBIS/Iron County School District (ICSD) Skills program. The options ranged from less than one year to 10 years or more. Of the 153 replies the highest response rate was the option 10 years or more with 50 responses. The results yielded an $M = 5.92$ and a $SD = 3.5$ (see Appendix D). The average teaching years for elementary teachers was 10.42 and middle school was 8.72.

Table 4

Teacher Characteristics

Variable	Value	Elementary school (n = 109)		Middle school (n = 44)	
		Number of responses	%	Number of responses	%
Gender	Male	31	28	12	27
	Female	78	72	32	73
Highest degree attained	Bachelors	78	72	31	71
	Masters	20	19	8	18
	[a]Ed.S	7	7	4	9
	[b]PhD	1	1	1	2
	Other	1	1	0	0
Program taught	General education	78	72	35	80
	Special education	19	19	7	16
	General and Special education	9	6	1	2
	Other	3	3	1	2
Ethnic Persuasion	Caucasian	86	79	29	66
	Hispanic/Latino	9	8	6	14
	Asian	7	6	4	9
	Black	1	1	1	2
	Pacific Islander	5	5	4	9
	Native American	0	0	0	0
	Other	1	1	0	0

[a]*Ed.S. refers to educational specialist.* [b]*PhD refers to doctorate of philosophy.*

Next we discuss how long teachers reported their particular school had been using PBIS- ICSD Skills program. The teachers options again ranged from less than 1 year to 10 years or more of employing the ICSD program. Response rates were similar to the results discussed in the previous paragraph. The majority of the teachers 67 in total (44%) choose the option 10 years or more. The results yielded a group $M = 7.07$ and a $SD = 3.26$. Appendix E refers to these findings in greater detail.

Responses to the PIRS Questionnaire

The most used of the 6 point Likert anchors were in the following order *(1) Strongly Disagree,(2) Slightly Disagree, (3) Disagree, (4) Slightly Agree, (5)Agree and (6) Strongly Agree.* The responses yielded mean range of 4.31 to 4.77 over the 17 questions. Question 15. "The monitoring procedures were manageable" had the lowest rating $M = 4.31$ and $SD = 1.34$. Question 7, "I have used this intervention in the school setting" had the highest rating $M = 4.77$ and $SD = 1.21$. Question 7 had the lowest $Var = 1.45$, while the highest $Var = 1.90$ was from question 5, "The intervention was appropriate to meet the schools needs and mission". The lowest $SD = 1.23$ for question 2, "Most teachers found this intervention appropriate." Question 5 "The intervention was appropriate to meet the school's needs" had the highest $SD = 1.38$.

Exploratory factor analysis. The maximum likelihood estimation procedure in Mplus was used to conduct an EFA of the 17 PBIS items. The first 3 of the 17 eigenvalues extracted were 14.133, 0.617, and 0.488. Hence, only the first eigenvalue was greater than 1.0. This one dominant factor accounted for 83% of the variance in the items and its eigenvalue was more than 22 times larger than the second largest eigenvalue. This pattern of findings provides support for a one-factor solution. However, I also ran a second analysis specifying that two factors be retained. The default Geomin rotation procedure was used for this two-factor solution. The two highest loadings on the second factor were .296 and .320 for items 8 and 9 indicating a very weak factor at best. The fact that the first factor was dominant coupled with the conclusion that the potential second factor was weak and basically uninterpretable provided further support for the one-factor solution. The factor loadings for each of the 17 items obtained from the one-factor model are reported in the EFA column of Table 5.

Table 5

Factor Loadings by Type of Analysis

| Item | EFA[a] | CFA | |
	Standardized loadings	Standardized loadings	Unstandardized loadings
1	.908	.908	1.212
2	.933	.933	1.147
3	.963	.963	1.284
4	.953	.953	1.265
5	.962	.962	1.320
6	.939	.939	1.248
7	.780	.780	0.937
8	.808	.808	1.077
9	.892	.892	1.165
10	.808	.808	0.989
11	.940	.940	1.214
12	.945	.945	1.230
13	.929	.929	1.239
14	.959	.959	1.251
15	.801	.801	1.073
16	.880	.880	1.148
17	.948	.948	1.280

[a]No unstandardized loadings are generated in EFA. Hence, only standardized loadings are reported for EFA.

Confirmatory factor analysis. A CFA was then conducted to formally test the hypothesized one-factor model based on the EFA results. The fit statistics for the initial, one-factor CFA model are displayed in the rightmost column in Table 6. Note that the values of the fit statistics for this one-factor CFA model are identical to the values of the corresponding fit statistics obtained from the one-factor EFA model. The similarity of these results should not be surprising, because when maximum likelihood estimation is used in the Mplus software to perform both EFA and CFA to analyze the same data.

Table 6

Fit Statistics for the EFA and CFA Models of the One-factor Solution

Fit statistics	EFA	CFA
Chi Square Test of Model Fit	569.415	569.415
Degrees of Freedom	119	119
p-value	0.000	0.000
RMSEA (Root Mean Square Error of Approximation)		
Estimate	0.157	0.157
90% Confidence Interval	0.170	0.170
Probability (RMSEA < .05)	0.000	0.000
CFI (Comparative Fit Index)	0.902	0.902
TLI (Tucker-Lewis Index	0.888	0.888
SRMR (Standardized Root Mean Square Residual)	0.031	0.031

An EFA produces only standardized loadings, but CFA produces both standardized and unstandardized factor loadings. Visual inspection of the two standardized columns in Table 5 confirms that the loadings produced by the two different procedures are the same for the one- factor solution. In addition to providing unstandardized loadings, CFA has an additional capability that is not available in EFA. That is, CFA can estimate error covariance (sometimes called *correlated errors* or *correlated uniqueness*) that EFA cannot estimate.

Fit statistics. Examination of the CFA fit statistics in Table 6 indicates that the one-factor CFA model that we have examined does not fit the data as well as would be preferred. For example, the comparative fit index (CFI) is .902 and the Tucker-Lewis Index (TLI) is

.888. Based on the guidelines proposed by Hu and Bentler (1995& 1999), each of these measures of relative fit should exceed .950. In addition, the Root Mean Square Error of Approximation (RMSEA) is higher than desirable. Ideally, this absolute measure of fit it should be .08 or lower.

Correlated errors. Examination of the modification indices reported in the Mplus output for the CFA indicated the presence of five item pairs that have correlated errors. The modification index for each of these item pairs is reported in the first row of Table 7. The five pairs that manifest this undesirable characteristic include (a) Item 2 with Item 1, (b) Item 9 with Item 8, (c) Item 12 with Item 11, (d) Item 14 with Item 13, and (e) Item 16 with Item 15. For a given pair of items, the presence of a correlated uniqueness indicates that the two items within that pair have something in common that is shared only by the two of them that is in addition to the variance which they share in common with all the other 15 items in the PBIS scale. This correlated uniqueness may be due to the similarity of the wording of the statements within each pair. For example, the similarity in the meaning of Items 15 and 16 is a plausible explanation for the correlated uniqueness in this pair. Items 13 and 14 also have very similar meaning. However, if similarity of meaning is the primary reason for the correlated errors then one wonders why Items 12 and 14 do not have a modification index indicating they share a common element that is unique to the two of them.

Another potential explanation for the correlated errors among the five item pairs that were earmarked as having this problem is that the two items within each pair are located adjacent to each other in the order in which they appear in the questionnaire. Hence, the correlated uniqueness may be a manifestation of a context effect or a redundancy effect that influenced the manner in which the teachers responded to the various items. This potential

explanation could be tested by changing the order in which the items appear and purposefully separating the items within each of these five pairs.

In the initial CFA model, all potential correlated errors were fixed to be zero. That is, they were not freely estimated as part of the model. The reported modification indices are not part of the parameters estimated in the model. However, to further investigate the influence of the five correlated errors, we tested five additional CFA models which we have labeled Models B, C, D, E, F, and G. We did this by freeing each of the five fixed correlated errors one at a time in the order of their magnitude. The fact that each resulting model was nested in the previous model permitted us to compute a chi-square difference test to formally determine whether freely estimating the corresponding correlated error resulted in a statistically significant reduction in model misfit. The results of this series of nested models are reported in the last five rows of Table 7. In summary, freely estimating each correlated error resulted in a significant chi-square difference test and also resulted in a slight increase in overall model fit as evidenced by the improvement in the CFI and TLI statistics.

Table 7

Fit Statistics and Reported Modification Indices for A Series of Nested Models

CFA Model	Correlated Error Pairs Included in Model	Chi-Square Test of Model Fit	Chi-Square Difference Test	Fit Statistics	Modification Indices Reported				
					Item 16 with Item 15	Item 9 with Item 8	Item 12 with Item 11	Item 14 with Item 13	Item 2 with Item 1
A	None	$\chi^2=$ 569.415 $df=119$ p < 0.0000		CFI = .902 TLI = .888 RMSEA=.157 SRMR = .031	41.333	35.998	33.708	32.697	33.728
B	16 with 15	$\chi^2=$ 522.476 $df=118$ p < 0.0000	$\chi^2 = 46.939$ $df=1$ p < 0.0000	CFI = .912 TLI = .898 RMSEA=.150 SRMR = .029		36.326	33.842	33.684	32.974
C	16 with 15 9 with 8	$\chi^2=$ 481.975 $df=117$ p < 0.0000	$\chi^2 = 40.501$ $df=1$ p < 0.0000	CFI = .920 TLI = .908 RMSEA=.143 SRMR = .028			35.037	33.651	32.902
D	16 with 15 9 with 8 12 with 11	$\chi^2=$ 445.182 $df=116$ p < 0.0000	$\chi^2 = 36.793$ $df=1$ p < 0.0000	CFI = .928 TLI = .916 RMSEA=.136 SRMR = .028				33.625	32.162
E	16 with 15 9 with 8 2 with 1 14 with 13	$\chi^2=$ 410.236 $df=115$ p < 0.0000	$\chi^2 = 34.946$ $df=1$ p < 0.0000	CFI = .936 TLI = .924 RMSEA=.130 SRMR = .029					28.660
F	2 with 1 9 with 8 2 with 1 12 with 11 14 with 13	$\chi^2=$ 380.197 $df=115$ p < 0.0000	$\chi^2 =$ 330.039 $df=1$ p < 0.0000	CFI = .942 TLI = .931 RMSEA=.124 SRMR = .028					

Reliability estimates. The reliability of the 17-item PIRS scale was estimated to be .987 using Cronbach's alpha coefficient. However, the use of widely used reliability coefficient assumes that the items are unidimensional and that there are no correlated errors. The results of both the EFA and the CFA provide evidence of the unidimensionality of the 17 PIRS items, but the CFA results show evidence of five pairs of correlated error errors. We also used Raykov's (2009) rho coefficient to obtain an estimate of the reliability because it provides a way of estimating reliability both in the presence of correlated errors and when no correlated errors are present. Cronbach's alpha coefficient estimated the reliability of the 17-item scale to be .9870. In comparison, Raykov's rho coefficient produced a reliability estimate of .9874 when the correlated errors were ignored and .9831 when the correlated errors were included in the model. So accounting for the correlated errors did not appreciably lower the estimated reliability.

Differences across school type and gender. An independent samples t-test was conducted to compare the differences between responses of elementary and middle school teachers. Results of Levene's test for homogeneity of variances was, $F = 2.171$, $p = .143$. There was a difference in the means, but not a statistically significant difference $t (151) = 1.484$, $p = 0.140$ between elementary schools $M = 61.86, SD = 19.351$ and middle schools $M = 56.50, SD = 22.287$. However, Cohen's d was computed for effect size and $d = .2568$. A two-way ANOVA was computed to examine gender and school type (elementary versus middle). In terms of gender $F = 3.722$ and $p = .056$. School level results were $F = 2.429$ and $p = 1.121$. School level compared with gender $F = .309$ and $p = .579$. Across all the three measures discussed none were statistically significant. Further analysis of the results

suggested there was no gender interaction. Female elementary and middle school teachers were slightly more satisfied than males with the program, but the scores were on the borderline of being significantly different ($p = .056$).

Overall satisfaction. Regarding teacher satisfaction with the district's PBIS program, resulted ranged from 4 (3%) very dissatisfied teachers to 33 (23%) very satisfied teachers (see Table 8). The descriptive statistics indicated an $M = 60.32$ and an $SD = 20.311$. The results were positively skewed toward program success in the opinion of the respondents.

Qualitative results. The teachers' comments are presented verbatim and not edited for grammar or spelling mistakes. For ease of reading, the term 'lead' will be used in this section to denote the individual overseeing the PBIS/ICDS program instead of the variety of terms used within individual schools, such as teacher, team lead and skills coach etc. Also, some respondents used individual's names and these were changed to ensure anonymity and confidentiality. Table 8 below provides an overview of the responses.

Table 8

Degree of Teacher Satisfaction

Degree of satisfaction	Number of responses	Percentage of responses
Very Dissatisfied	4	3
Dissatisfied	24	15
Slightly Dissatisfied	28	18
Slightly Satisfied	28	18
Satisfied	36	25
Very satisfied	33	21
Total	153	100

From the 36 individual teacher responses, there were 59 total comments, 43 (73%) positive and 16 (27%) negative comments, as well as 15 teacher suggestions for program improvement. The following themes emerged in relation to the PBIS program; having the right person to lead the program, consistency of implementation, and a need for ongoing training. Less significant themes that emerged were confusion about the purpose of the PBIS program and its narrow implementation. The overriding theme throughout the comments was the importance of having the right individual in the role of leading the PBIS program. The next set of relevant remarks was related to issue of consistency of implementation and program success was directly due to this issue. The key suggestion from teachers was the need for ongoing and updated training that includes administrators and other academic staff. One teacher suggested this would decrease the chances of the program derailment or ineffective implementation.

Positive responses. Thirty-one (72%) of the positive comments observed that what made their program implementation successful was the lead's ability to build a teacher-student relationship and develop mutual respect. One teacher remarked, "I know the Skills teacher/aide is a HUGE factor in the success of the program." Another teacher remarked that it was "Necessary to have the appropriate person to implement the procedures and follow through with the unique personalities of each student." The theme continued as a middle school teacher described the lead that really made the program effective in the terms of documentation and working procedures.

Whether the respondents' comments postulated success or failure of the program was dependent upon the lead person building strong, working relationships with the students and academic staff. Thus, implantation of the program was considered successful if the lead had

the skills in providing a critical link between teachers, administration and difficult students. Similar remarks on this theme indicated that their lead was very involved in teaching students the appropriate behaviors and his/her knowledge of student behavior went beyond the basic program. One teacher observed that success in their school was due to the lead having first built a positive relationship with the students. Success came in part because the lead had taken the time to get to know students and to work with groups as well as individual students that came into her classroom. In the same vein, the negative comments relating to failures within certain schools were largely critical of the relationship building skills of their lead and their lack of understanding of the program's aims. The overriding theme that emerged from the comments was a need for a better outline for who qualifies to lead the skills program, because the skills program works or doesn't work based on the talents and expertise of the lead.

The next set of relevant remarks was related to the issue of consistency of implementation. One teacher attributed success to "A lead that had been very caring, fair and consistent." One program was described as 'okay', but the skills coach wasn't as consistent as needed. This was observed further by comments suggesting more consistency is required during implementation. It was stated, "The skills program as currently constituted, is hindered by varying levels and styles of implementation." Another remarked, "The lack of consistency from teacher to teacher, principal to principal and school to school lessens the effectiveness of the program." Numerous comments suggested the leads were inconsistent in which students they allowed to access the program, how long for and whether or not to use it punitively. It seems the leads that facilitated most student success were those that understood the program's purpose and implemented it appropriately.

Some of the narrative responses suggested that teachers believed their school-wide intervention goals were important and working. One goal was to reduce classroom absentees and time out through positive behavior support initiatives. One teacher stated that the intervention facilitated in a problem child being "…able to function in the classroom usually within a short period." However, another commented "The skills program is not a punishment. Therefore, many students are never deterred from the behaviors that warrant them being in the skills program." Several elementary school teachers felt the program goals were very worthwhile and making a significant difference with decreasing negative behaviors, but were not used enough. On a positive note it was remarked that the right goals "… were very effective in specific behavior modification and not punishment." Another concern was that while the goals were appropriate for meeting the needs of many of students, but they did not help "…dealing with more and more students who suffer from psychological problems and disorders. What we able to conclude from these comments is the school-wide overall goal(s) are important to the teachers and they have worked in many instances, however lack of training and a misunderstanding of its purposes of the program appear to contribute to the goals being partially or poorly meet.

It was clear from the majority of the positive responses (79% of the total comments) that the school-wide intervention plan was beneficial to the students in the district. One teacher recognized a benefit in that "It provides a critical link between teachers and difficult students." Another thought its benefits came from holding students accountable for what is expected of them. One teacher saw the value of the program in terms of 'our school,' "It has made it possible for ALL students to learn." Another observed, "Having a skills coach work with a child who needs extra help behaviorally allows me to focus on the rest of the class."

This individual further remarked that the intervention was helpful with students who were disruptive or not possessing the necessary skills to function in a classroom.

A common theme among the positive comments was the need for greater use of the program. One advocate of the plan stated without exception, when students utilized the plan "…behaviors subside and the child is able to function in the classroom usually within a short period of time." Some teachers supported the plan in terms of the general population of their school, because it was useful in having students reflect and learn better choices. One teacher commented "I like it because it truly teaches life skills that children need to master before the academics can be addressed." Akin to this response, one middle school teacher believed it was an effective way to maintain classroom management and another asserted "The Skills coaches at our school were very effective in specific behavior modification and not punishment." And finally, "Some students truly need to learn skills to make them successful learners in the school setting." Overall, the comments from teachers across both elementary and middle schools were positive towards the intervention plan.

Negative responses. There were a few negative comments (7%) made about the plan in regard to its implementation and its impact on students. One concern was that poor implementation often led to students falling behind in classroom learning and activities. One teacher observed, "I saw very little change in attitude or effort from the students." This individual also observed that students often returned to their misbehaviors after fulfilling the minimum requirements of the plan. Teachers also noted that some students saw the intervention as "A badge of honor, whilst others viewed it as a form of punishment, and yet other students preferred it over being in class." One teacher commented, "Often, students in the program will purposefully do what is unexpected to gain attention in skills." Another

maintained "I appreciate the idea, but skills is a punishment. All the students know it." In conclusion, the majority of teachers found the procedural element of the school-wide plan satisfactory, but to different degrees. The main challenge is summed up appropriately by one teacher, of "The skills program changes its effectiveness with the lead."

Teacher suggestions. The key suggestion for improvement from the teachers was the need for ongoing and updated training specifically for administrators. This would "Decrease the chances of the program derailment." Some teachers proposed a total re-vamp of their program, whereas others thought it was so productive that it needed to be extended further. Some felt that it was important to extend the program because it has made both teachers and students alike accountable for positive behavioral practices. In some cases it was cited that the program was becoming too complex. One teacher remarked "The program had too many hoops to jump through to even get a student placed in Skills and provided only a temporary break, never a permanent solution."

Additional qualitative findings. One concerning theme that emerged from the qualitative findings was some respondents (6%) confusion and misunderstanding of the purpose of the PBIS intervention plan. The narrative responses had a recurrent theme which was summed up by one teacher "Some academic staff uses the program as means 'to get rid' of problem or hard students rather than using it as a positive behavior support." Also, some teachers thought students saw the program as a punishment whilst others used it as an escape from class. These practices appear to stem from a lack of knowledge in regard to the purpose of the skills program. It also was cited that "Skills coaches at some of the school were not very effective in specific behavior modification, but it was used as a form of punishment." This individual concluded, "Those leads that use the skills coaching for behavior issues, then

those behaviors subside and the child is able to function in the classroom usually within a short period of time." Another theme from teacher suggestions was that the program was too narrow and did not presently fully fit the more challenging students. Other suggestions were that the program should include "Students who defiantly choose not to work or turn in work, right along with students with risky/disruptive in-class behavior." Extending the Skills program to an after school program that would affect the parents and the students was also considered rather than using it as a form of detention time. Others observed program success was largely based on principal and administration buy-in.

CHAPTER 5

DISCUSSION

The five research questions of this study will be answered individually by using both quantitative and qualitative data gathered from the survey. This will be followed by a discussion on the limitations of the study which includes suggestions for future improvements and then final conclusions will be drawn.

Question 1

How do the psychometric properties of the revised PIRS compare with original PIRS?

Exploratory factor analysis. The Lane et al. (2009) study postulated evidence for the reliability and structural validity of scores from the PIRS and indicated the PIRS was a one-factor instrument, with high internal consistency and utility. The instrument was found to replicate very well across elementary, middle, and high schools. Findings from our study across the elementary and middle schools confirmed these findings. After the EFA was computed we found that the PIRS appears to be a one-factor model. Our EFA found one factor was retained for both school levels. Consequently, when a second factor was tested none of the PIRS items loaded on this factor. The factor loadings for the one factor solution ranged from 0.62 to 0.90 in Lane's study, while in our study they ranged from 0.780 to 0.963. EFA findings were statistically significant ($p = <.0001$) across both studies, suggesting the PIRS is a one-factor instrument, with high internal consistency and utility.

Confirmatory factor analysis. In the CFA we conducted, the results of CFI and TFI were both .996 exceeding the accepted norm (.93) for good model fit. Likewise, the *RMSEA*<.05, suggested very good model fit. Similarly, the EFA demonstrated statistical significance again suggesting good model fit. Combining the findings of the EFA and CFA

and comparing them with Lane et al. (2009) findings, we can confirm that the PIRS is a one factor instrument and that each individual item is a good measure of PBIS type programs. Suggestions for future studies would be to shorten the survey. This is because items 13 and 14 were very similar and could be delegated.

Reliability analysis. Comparison of the PIRS reliability estimates was as follows; for Lane et al. (2009) study Cronbach's alpha value = .97. Our computed unstandardized estimates of the reliability of the PIRS items yielded a Cronbach's alpha coefficient = .987 for the data. Raykov's coefficient =.983. From these findings we can postulate the PIRS is a strong one factor model and the resulting scores are internally consistent.

The psychometric properties of the revised PIRS used in the present study appear to be very comparable with the original PIRS, producing very similar results. Findings from both this study and Lane et al. (2009) indicate that the PIRS is a reliable instrument producing consistent and strong survey results in both studies. Thus, the psychometric properties, when placed in juxtaposition, appear to be dependable in both cases. This is further substantiated in that the samples used were similar across both studies (i.e., teachers from elementary and middle schools participated in both studies). With very little variability between outcome measures of the EFA/CFA in both studies, we may conclude that the PIRS is a reliable instrument when used to measure the social validity of PBIS programs.

As stated the adapted PIRS appears to be a reliable instrument with strong internal consistency. The strength of these findings may be due, in part, to the fact that the adapted PIRS has been developed over a thirty year period. In 1980 the instrument known as Kazdin's Treatment Evaluation Inventory-15-item (TEI) was designed to measure teacher's perceptions of treatment acceptability and effectiveness. The TEI was modified and adapted and the

Behavior Intervention Rating Scale-24 (BIRS) emerged (Witt & Martens, 1983). The BIRS was then modified and the Intervention Rating Profile-20 (IRP) was developed. The IRP was reported to have a Cronbach's Alpha of .98 (Martin et al., 1985). Next, the PIRS-15 was introduced followed by the adapted PIRS-17, both of which were reported to have an alpha of .97 (Lane et al., 2007). Consequently, our findings report a Cronbach's Alpha of .978.

According to Peia (2015) more attention needs to be given to assessing social validity of primary prevention plans and argued that this has been limited, in part, due to the absence of a reliable standardized instrument. The findings of this study provide further evidence that the PIRS is an instrument that may be able to achieve this goal. Thus, this study somewhat reflects the postulate that school-based skills training for example should be taught using explicit instructions and validated programs linked to school-specific needs (Ross, Horner, & Stiller, 2013).

Further investigation into the psychometric properties of the PIRS was conducted to determine if the survey could be exhibited with improved parsimony. The previous CFA conducted found the presence of several pairs of items with correlated errors. These findings indicated the possibility of redundant items present in the PIRS. An examination of the face value, structure, content of these items and their factor loadings confirmed our first impressions. Four of the five pairs of items appeared to be asking the same type of questions, but each in a slightly different way. Consequently, the research team decided to retain the one item with the highest factor loadings from each pair. Also these items were constructed in a way that was more specific than their rejected counterparts. Each item with the lower factor loadings was extracted until there were only 13 items remaining. The extracted items were 1, 8, 11 and 15. Each time an item was extracted and a CFA was computed we found that the

integrity of the PIRS was still kept. Our findings revealed the PIRS to still be a one factor measure with strong internal consistency even with four less items. Thus, we question the need for 17 items and could some of these items be extracted from the survey. However, our findings cannot be interpreted in isolation since our sample size (153) was not large. Our suggestions would be to replicate the study with a larger and more diverse sample of teachers. If the statistical results were similar to our study then there would be a strong argument for a reduction in the number of items. This in turn would make the PIRS more parsimonious whilst keeping its integrity. Furthermore, we recognized that the 5 pairs of correlated errors were also adjacent to each other. This suggests that the order may have had an impact on how the teachers responded to the relevant items. If the items were reorder it is possible that the teachers may have responded different. In conclusion further investigation is necessary to truly understand the psychometric properties of the PIRS in terms of item construction, context and quantity.

Question 2

Do survey results differ across elementary versus middle school? The literature suggests there is a need to understand to what degree the intervention contributed to the students' success across all school levels. Drawing data from a limited school level may result in thinly veiled results that may not be generalizable (Gresham, Gansle, & Noell, 1993). In order to examine the difference between elementary and middle school responses, an independent samples t-test was conducted. There was a small difference between the two group scores, but it was not statistically significant. The results of the test indicated both elementary and middle school teachers overall gave similar survey responses overall in regard to the PBIS intervention plan.

These finding were similar with Lane et al. (2009) results which were found to replicate across educators from elementary and middle schools.

Question 3

How socially acceptable to the teachers is the school-wide intervention procedure? The PIRS was structured in a way that higher scores suggested higher social acceptability (Lane et al., 2009). The current study results suggested that many teachers found the district's PBIS program socially acceptable. Overall, the response rates were much higher on the anchors related to positive attitudes towards the program. Many teachers wanted to see the program expanded as it was successful in reducing negative behaviors and helped the children function in the classroom successfully.

Some teachers supported the plan in terms of it helping the general population reflect and inform positive decision making. Similarly, a number of teachers saw the benefits of the program in terms of teaching life skills and as an effective approach to maintaining classroom management/discipline. Overall, the majority of comments from teachers across both elementary and middle schools were positive towards the intervention plan.

Similar scales have been used to assess treatment/intervention acceptability in terms of procedures, such as Kazdin's Treatment Evaluation Inventory-15-items and the Intervention Rating Profile -20 items (Witt & Martens, 1983). Both of these are considered to have face validity, but debate has arisen about the internal consistency and reliability of these instruments and the limitations in relation to their external validity (Calvert & Johnston, 1990).

Importantly, knowing the degree of teacher satisfaction is essential for program growth and development, since studies have shown that PBIS has helped to increase teacher

motivation and satisfaction (Horner, Freeman, Nelson, & Sugai, 2007). McArdle's (2011) investigation of PBIS in Illinois schools revealed information regarding teacher motivation. McArdel reported that the level of teacher buy-in was a critical barrier to successfully implementing PBIS. Cooper (2010) upholds the principle that teachers are key players in the effectiveness of PBIS implementation in schools. Hence, they should be actively allowed to be involved in teaching acceptable social habits and support in the implementation of the procedures with fidelity. The data from our study implies there has been a good degree of buy-in by the teachers and perhaps this is why it appears to be working well.

Question 4

What are elementary through middle school teachers' perceptions of the social significance of their school-wide intervention goals? From the quantitative data it can be inferred that a high proportion of teachers considered their school-wide PBIS intervention goals socially significant. The highest responses rates were evident in the *Agree* anchor followed by *Strongly Agree*, whereas the lowest response rates were present with the *Strongly Disagree* and *Disagree* options. Note, though findings were consistently supportive of the programs goals, there was still approximately 14% of the teachers who were left unsatisfied to varying degrees.

Cooper (2010) postulated teachers who believe in the social significance the programs goals will implement it more readily and effectively. This was reflected with the schools investigated in this study that had the right PBIS lead in place. The comments suggested a good degree of morale among academic staff and that the goals had a positive impact on the children. Horner, Freeman, Nelson, and Sugai (2007) suggested that academic staff need to be consistent and understand the importance of school-wide goals if teachers are

to understand and believe in their social value. Otherwise some teachers will perceive PBIS as just another mandatory program. We can see from the teachers' comments that the goals were socially acceptable and working in many instances. Where they did not seem to be working is when the goals were misunderstood or poorly implemented by the lead or other academic staff.

Question 5

Do the teachers consider the school-wide intervention plan beneficial to students? The overall consensus of teachers across all items was that the school-wide intervention plan was beneficial to students. There were reasonable to high response rates in all the positive response anchors. For example Item 2, "Most teachers found this intervention appropriate" had 69 *Agree* and 33 *Strongly Agree* responses compared with just 9 *Disagree* and 4 *Strongly Disagree*. This trend continued throughout all the item responses. Question 17 directly addressed the issue of whether this intervention was beneficial for the students. The positive responses numbered 123 (80%) compared with 30 (20%) negative responses, in other words, 4/5 agreed to varying degrees that the plan had some level of benefit to the students. When both teachers and students see the benefit of PBIS programs a positive school climate can emerge and an increase in student achievement in certain academic subjects (Bradshaw & Leaf, 2008).

Overall, we can conclude from the results that teachers generally saw the intervention plan as beneficial to students. It appears the plan failed when the leads/teachers implement it incorrectly, or academic staff/students misuse or misunderstand it. A number of teachers postulated a plethora of benefits the plan had for students including changing behaviors, reengaging students in learning, and providing skills for students to function appropriately in the classroom.

Study Limitations

The most significant weakness of this study related to time constraints. The data gathering process started two weeks before the close of the semester. This was during a time when teachers were busy wrapping up, marking, grading work and preparing for their summer break. Motivation to participate in the study may have been lacking for some of the teachers.

Ideally, the survey would have been distributed at least two weeks earlier to optimize the number of participants. Increased time and contact with the target sample would then have improved the likelihood of a higher response rate. This may have provided a greater spread and diversity of responses across genders, ethnicities, years of teaching and so forth. Furthermore, additional time would have allowed the district representatives and the research team to effectively endorse and promote the importance of the study and the need for high teacher participation. In terms of the survey, the number of responses was good. However, a greater number would have made the findings more generalizable. An additional two weeks prior to the close of the semester would have provided sufficient time to encourage buy-in from teachers and consequently increase the response rates.

There also appeared to be a significant amount of non-response bias from teachers to the survey (47%). The survey was distributed two weeks before a vacation, thus making it difficult to follow up on the non-responders. The researchers offered to visit the district to follow up on these individuals; however it was deemed too intrusive and evasive to do this at the time of the study. According to the literature, an acceptable degree of buy-in for PBIS from key stakeholders should be around 80% (pbis.org, 2012). Our study found the degree of buy-in for PBIS was approximately 64% with another 5% of the teachers seemingly undecided at the time of the study. There are two likely reasons for this. Firstly, time constraints due to the

survey distribution happening only two week before the close of the semester. Secondly, the qualitative results suggested that in some of these middle schools administration were not very involved in the PBIS program. This lack of enthusiasm or interest by administrators may have influenced the nonparticipation of some teachers at that school level.

Another limitation of the study was a need to use a more ethnically dense and diverse school district. In relation to the PIRS, the present data signifies PBIS buy-in from minority groups, but the findings would be more substantiated with a larger minority sample. Although Iron County was significantly more diverse than the one used in the Lane et al. (2009) study, the findings are still not conclusive. Additional research could provide greater understanding of the psychometric characteristics of the PIRS and the level of PBIS buy-in from minority groups of the teaching fraternity. This would also support future studies in determining the degree of consumer satisfaction, and how representative ethnic groups are within a school district.

Kincheloe and Steinberg (1993) suggested that educators need to value the perspectives and opinions of culturally diverse groups. This is to ensure that any covert or implicit cultures in a school that may impact negatively on programs, teachers' or students' values, attitudes, and beliefs are highlighted (Hanson, Gutierrez, Morgan, Brennan, & Zercher, 1997).

The next limitation was in relation to the qualitative responses. The comments section of the survey was intentionally unstructured to allow freedom of responses. However, adding specific questions would have helped in gathering deeper insights, thoughts and opinions of the program from the teachers. As with many surveys, respondents were not provided opportunity to clarify questions in relation to the PBIS or the PIRS. Consequently, we may

have lost some valuable data in relation to the program or perceptions of the questionnaire itself. Furthermore, additional qualitative data would have helped us identify new or emerging themes that we may not have considered.

Unfortunately, during the time of study the district had not fully implemented PBIS into their high school program. Therefore the sample and response size was limited to elementary and middle schools. Using a district that had implemented PBIS across all school levels would provide a potentially larger sample size and more diverse responses, achieving greater measurement strength and more generalizability. In relation to the 17 item PIRS, the use of larger sample sizes would increase the chance of detecting differences across items and provide greater confidence in study findings.

Conclusions and Implications

Precedents for this type of study have been argued and justified by other researchers and scholars (Lane et al., 2009; McArdel, 2011). This study set out to explore the psychometric properties of the adapted PIRS to measure Utah teacher's perceptions of the social validity of their school-wide intervention plan. The literature on this subject postulated the PIRS was a one factor instrument with strong item reliability when used to measure school-wide PBIS plans (Lane et al., 2009). The main implications of the study's findings are threefold. Firstly, the PIRS is potentially a strong instrument to measure socially validity of PBIS programs. Secondly, the number of the items within the PIRS could be reduced to give it greater parsimony whilst keeping its integrity. Thirdly, the PIRS is a useful tool for measuring the social validity of teacher's perceptions of PBIS programs and can be used to inform, modify and improve practices in schools.

The empirical findings from the study confirmed Lane et al. (2009) findings. Evidence gathered from performing an EFA computed very similar results confirming the PIRS is a one factor model with strong internal consistency. This was substantiated further as we went a step beyond the original work by Lane and conducted a CFA testing up to a five factor model. Again the results were consistent with EFA showing all items loading on one factor. Similarly, reliability estimates computed the 17 items during Lane's study for Cronbach's alpha value were between .97-.98 and ours was .987. From these findings we may infer that the psychometric properties of the PIRS when used with comparable conditions produce results that are similar.

Elementary teachers were slightly more in favor of the school-wide PBIS intervention plan, though not to a statistically significant degree. Similarly, females had bought-in to the plan over males across both school types. However, none of the computed results were statistically significant. Thus, we can infer that elementary and middle school teachers overall gave similar survey responses in regard to the school intervention plan. With these findings in mind we can infer that across the school types and genders there is a good range of buy-in for the PBIS plan.

It appears from the quantitative and qualitative data the school-wide intervention procedure was acceptable to most of the teachers. The quantitative data presented a picture suggesting approximately four-fifths of all the respondents considered the procedures manageable, consistently implemented and monitored appropriately. From the narratives most described the implementation procedures as working to varying degrees and a number saw the procedures working in relation to the skills of the lead. Negative comments about procedural issues were in the same vein that failures were in part due the lead person. Some

teachers observed more consistency is required during implementation. Training was referred to in terms of helping "Decrease the chances of the program derailment." Overall many of teachers found the procedural element of the school-wide PBIS plan satisfactory to varying degrees.

The quantitative data inferred that a high proportion of teachers considered their school- wide intervention goals socially significant. The response rates were highest in the *Agree* anchor followed by *Strongly Agree.* The theme continued as a large number of teachers across both school levels rated the goals as acceptable, appropriate for the school and effective in meeting its purposes. Although these findings were consistently supportive of the programs goals, there were still approximately 14% of the teachers who were left unsatisfied to varying degrees.

The narrative responses suggested teachers believed their school-wide intervention goals were important and working. Furthermore, teachers saw the goals as one means to reduce classroom absentees and were very effective in specific behavior modification. The major drawback for some teachers was the goals were not appropriate for meeting the needs of many of the very difficult students. Some postulated a misunderstanding of the plans purposes appear to have contributed to the goals being poorly meet.

Overall, teachers signified in both the quantitative and qualitative responses that the plan was beneficial to the students. Again the highest response rates were all the positive response anchors. Of the 17 items, three directly focused on this topic and a majority of responses attained toward the PBIS plan was beneficial. Again approximately four-fifths agreed that the plan had some level of benefit to the students. The majority of the narrative responses collaborated the quantitative data. Some teachers commented that the plan helped

develop a critical link between teachers and difficult students and it held students accountable

for what was expected of them.

Another saw it beneficial in terms of making it possible for all students to learn. Other

described the plan as a means of supporting students who were disruptive or not possessing the

necessary skills to function in a classroom. Importantly, many commented for the program to

be expanded further. The few negatives were in relation to teachers perceiving the plan a form

of punishment. Overall, we can conclude from the quantitative and qualitative data that in

general, teachers viewed the intervention plan as beneficial to students.

The one new theme that came out of the study findings was that of confusion and

misunderstanding of the purpose of the PBIS intervention plan. This came out of the narrative

responses which commented that some teachers either thought or intentionally used the school-

wide plan to 'get rid' of problem or hard students. Some did not recognize it as positive

behavior support. Similarly, teachers noted that some students saw the program as a punishment

whilst others used it as reason to abscond from lessons. It appears there was some lack of

knowledge in regard to the purpose of the skills program. Teachers suggested further support

from administration, training and knowledge sharing was required to improve practices.

According to Cooper (2010) the value, impact, sustainability and growth of PBIS is only as

good as the supportive leadership and ongoing professional development and training. (Cooper,

2010). From a number of the teachers' responses it appears that the PBIS training model used in

the district is either not clear, too narrow, or is not conducted frequently enough. Within the

MTSS framework evidence based professional development and training/coaching is seen as

essential (Guskey, 2000). Guskey maintained that this type of training enhances student

learning, and empowers teachers to make informed decisions in regard to managing their

student's behaviors appropriately. Evidence based training is integral to linking the implementation of PBIS and buy- in from key stakeholders. To ensure program success and key stakeholder satisfaction, the training process requires continual follow up sessions and regular discussions on best practice and interpretation of findings.

Together with the reliability and the social validity findings we postulate of the potential benefits of using PIRS as a tool to effect positive change in elementary and middle schools. Recommendations for future research include:

- Determine the effectiveness of the PIRS further with more diverse populations also including high schools.
- Additional psychometric evaluations to test the reliability and validity of the PIRS including test-retest, internal consistency reliability and criterion related validity.
- Employ the PIRS pre and post PBIS program implementation
- Measure consumer satisfaction for the PBIS type programs with other key stakeholder including, parents and students.

The empirical results from the Lane at al. (2009) study and ours can in part fill some of gaps to build on this area of research. The study has offered an evaluative perspective from different teachers from a different demographic than in Lane's work. By comparing the demographic and survey results of both studies, we found very similar results. This drives the notion that the PIRS should be considered more generalizable than previously considered. Thus, this work has contributed to the existing understanding of the PIRS in terms of its reliability. The theoretical importance of this study is that it can add to the limited, but growing literature related to PBIS type programs that employ social validity measures to

determine consumer buy-in. By taking the theoretical principle that social validity can be measured with the PIRS, and then testing in the right conditions, helps gets closer to a legitimate form of praxis. However, further research is required. Thus, this study has positioned within a growing theoretical framework and how PBIS programs can be measured effectively from a consumer standpoint.

As a direct consequence of this study we will share our data with the relevant school district which then can be used as a resource to improve practices by teachers and administrations. Consequently, these findings could also influence other educators to use the PIRS to potentially reduce challenging behaviors in schools. More widely, these findings could affect academics and other researchers to use the PIRS as a valuable tool to socially validate PBIS programs. Furthermore, this could be implemented in schools to more minority or diverse populations to promote and improve student behaviors. The comparisons of the psychometric properties of the PIRS have provided further evidence of the authentic of the measure for PBS type programs. This can be added to the literature to show the social validity of PBS can be measured effectively with a reliable instrument. Importantly, we have found that the PIRS appears to be a strong instrument in measuring the social validity of school-wide plans. Thus, its value lies in the fact that a reliable instrument produces dependable data, which can potentially effect positive change in student behaviors.

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Appendix A
Elementary School Survey

Elementary School Level. The purpose of this survey is to obtain information that will aid in determining the effectiveness and usefulness of the primary prevention (add the specific name used by school) plan components for your school. The primary prevention plan components are used by all educators. Please read the following statements regarding the primary prevention plan developed by your school and circle the number which best describes your agreement or disagreement with each statement.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This has been an acceptable intervention for the school.	1	2	3	4	5	6
2. Most teachers found this intervention appropriate.	1	2	3	4	5	6
3. This intervention has proven effective in meeting its purposes.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The intervention was appropriate to meet the schools needs and mission.	1	2	3	4	5	6
6. Most teachers found this intervention suitable for the described purposes and mission.	1	2	3	4	5	6
7. I would be willing to use this intervention in the school setting.	1	2	3	4	5	6
8. This intervention has *not* resulted in negative side-effects for the students.	1	2	3	4	5	6
9. This intervention has been appropriate for a variety of students.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in elementary program settings.	1	2	3	4	5	6
11. The intervention is a fair way to fulfill the intervention purposes.	1	2	3	4	5	6
12. This intervention plan is reasonable to meet the stated purposes.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention is a good way to meet the specified purpose.	1	2	3	4	5	6
15. The monitoring procedures are manageable.	1	2	3	4	5	6
16. The monitoring procedures will give the necessary information to evaluate the plan.	1	2	3	4	5	6
17. Overall, this intervention would be beneficial for elementary students.	1	2	3	4	5	6

Additional information

1. I am.　　a. Male　b. Female

2. I am.
　　　　a. Caucasian
　　　　b. Asian
　　　　c. Black
　　　　d. Hispanic/Latino
　　　　e. Pacific Islander
　　　　f. Native American
　　　　g. Other _____ (please specify)

3. I have been a qualified teacher for_____years

4. Highest degree attained.
　　　　a. Bachelors
　　　　b. Masters
　　　　c. Educational Specialist
　　　　d. PhD
　　　　e. Other

5. Program taught.
　　　　a. General education
　　　　b. Special Education
　　　　c. Both a and b
　　　　d. Other

6. I have been using PBS for_____years

7. My school has been using PBS for_____years

8. What grade level do you currently teach? _____

Appendix B
Middle School Survey

Middle School Level: The purpose of this survey is to obtain information that will aid in determining the effectiveness and usefulness of the primary prevention (add the specific name used by the school) plan components for your middle school. The primary prevention plan components are used by all educators. Please read the following statements regarding the primary prevention plan developed by your school and circle the number which best describes your agreement or disagreement with each statement.

	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
1. This would be an acceptable intervention for the middle school program.	1	2	3	4	5	6
2. Most teachers would find this intervention appropriate.	1	2	3	4	5	6
3. This intervention should prove effective in meeting the purposes.	1	2	3	4	5	6
4. I would suggest the use of this intervention to other teachers.	1	2	3	4	5	6
5. The intervention is appropriate to meet the middle school programs needs and	1	2	3	4	5	6
6. Most teachers would find this intervention suitable for the described	1	2	3	4	5	6
7. I would be willing to use this intervention in the middle school program	1	2	3	4	5	6
8. This intervention would *not* result in negative side-effects for	1	2	3	4	5	6
9. This intervention would be appropriate for a variety of students.	1	2	3	4	5	6
10. This intervention is consistent with those I have used in middle school	1	2	3	4	5	6
11. The intervention is a fair way to fulfill the intervention purposes.	1	2	3	4	5	6
12. This intervention plan is reasonable to meet the stated purposes.	1	2	3	4	5	6
13. I like the procedures used in this intervention.	1	2	3	4	5	6
14. This intervention is a good way to meet the specified purpose.	1	2	3	4	5	6
15. The monitoring procedures are manageable.	1	2	3	4	5	6
16. The monitoring procedures will give the necessary information to	1	2	3	4	5	6
17. Overall, this intervention would be beneficial for middle school students.	1	2	3	4	5	6

Additional Information

1. I am.　　a. Male　b. Female

2. I am.
    a. Caucasian
    b. Asian
    c. Black
    d. Hispanic/Latino
    e. Pacific Islander
    f. Native American
    g. Other _____ (please specify)

3. I have been a qualified teacher for_____years

4. Highest degree attained.
    a. Bachelors
    b. Masters
    c. Educational Specialist
    d. PhD
    e. Other

5. Program taught.
    a. General education
    b. Special Education
    c. Both a and b
    d. Other

6. I have been using PBS for_____years

7. My school has been using PBS for_____years

8. What grade level do you currently teach? _____

Appendix C
Consent Form

Consent to Participate in Research

This research study is being conducted by Brigham Young University and the Iron County School District. The purpose is to understand the perceptions of teachers in regard to implementing Positive Behavior Interventions and Supports (PBIS) in Utah Schools. You were invited to participate because you are a teacher in a school in which PBIS has been implemented.

Procedures

Participation in this research involves completing a short survey which will take about 1 0 to 15 minutes of your time.

Risks/Discomforts

There may be questions that you are uncertain about or to which you would prefer not to respond.

Benefits

There will be no direct benefits to you. It is hoped that through your participation, the school district and educators will learn of ways to improve PBIS in schools and that this will lead to improved student outcomes.

Confidentiality

The computers on which the data are stored will be password protected and only the research team will have access to survey data. Numbers rather than participant names will be assigned to these data. Data analyses will include only gathered data. You will not be contacted in the future without your permission to do so. All the survey and any personal data and other associated study materials will be kept confidential.

Compensation

You will not be paid for being in this study, but you will have the opportunity to be entered into a drawing for 1 of 10 prepaid Visa $50.00 gift cards upon completion of the survey: Your odds of winning a gift card depend upon the number of participating teachers, but will be no less than 1/50.

Participation

Participation in the research is voluntary. You may refuse to participate without adverse consequences of any kind.

Questions about the Research

If you questions about the study, you may contact;
Jason Wright, MA
Brigham Young
University 150 MCKB
Provo, UT 84602
Phone: 801-426-0051
jwright353@yahoo.co.uk

Paul Caldarella, PHD
Brigham Young
University 149D MCKB
Provo, UT 84602
Phone: 801-422-5081
paul_caldarella@byu.edu

If you have questions regarding your rights as a research participant contact the IRB Administrator at (801) 422-1461. Brigham Young University, Provo, UT 84602; irb@byu.edu.

Statement of Consent
I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study. I understand that by completing the survey link I am giving my consent to   participate.

Name (Printed):

Signature: _____ Date: _____

Appendix D

Number of Years the Teacher Has Been Using PBIS/Iron County School District (ICSD) Skills Program

Number of Years	Responses	Percentage
1 year	12	8
2 years	20	13
3 years	25	16
4 years	15	10
5 years	9	5
6 years	4	3
7 years	3	1
8 years	6	4
9 years	9	6
10 years or more	50	34
Total	153	100%

Appendix E

Number of Years the Teacher Has Been Using PBIS/ICSD

Number of Years	Responses	Percentage
1 year	4	3
2 years	9	6
3 years	26	16
4 years	13	8
5 years	9	6
6 years	1	1
7 years	3	2
8 years	2	1
9 years	19	12
10 years or more	67	45
Total	153	100%

Appendix F

PIRS Frequency of Teacher Responses

	Question	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	Total Responses	Mean
1	This was an acceptable intervention for the School.	6	7	9	31	55	45	153	4.62
2	Most teachers found this intervention appropriate.	4	7	11	30	68	33	153	4.58
3	This intervention proved effective in meeting its purposes.	6	8	12	33	60	34	153	4.48
4	I would suggest the use of this intervention to other teachers.	4	11	8	26	63	39	153	4.57
5	The intervention was appropriate to meet the school's needs and mission.	6	10	12	27	62	36	153	4.49
6	Most teachers found this intervention suitable for the described purposes.	6	9	13	29	62	33	153	4.46
7	I used this intervention in the school setting.	4	5	10	23	66	45	153	4.75
8	This intervention did not result in negative side-effects for the students.	4	9	13	27	56	45	153	4.62

9	This intervention was appropriate for a variety of students.	5	9	10	27	61	41	153	4.61
10	This intervention was consistent with those I have used in school settings.	5	4	13	29	59	43	153	4.64
11	The intervention was a fair way to fulfill the intervention purposes.	5	6	11	29	59	43	153	4.64
12	This intervention plan was reasonable to meet the stated purposes.	5	9	9	25	68	37	153	4.60
13	I liked the procedures used in this intervention.	6	8	16	31	54	38	153	4.48
14	This intervention was a good way to meet the specified purpose.	6	8	8	32	66	33	153	4.53
15	The monitoring procedures were manageable.	6	10	18	32	60	27	153	4.32
16	The monitoring procedures gave the necessary information to evaluate the plan.	7	7	13	29	66	31	153	4.48
17	Overall, this intervention was beneficial for the students.	5	6	15	24	61	42	153	4.60

Appendix G

Additional Descriptive Statistics

Statistic	Min Value	Max Value	Mean	Standard Deviation	Total Responses
1. This was an acceptable intervention for the School.	1	6	4.62	1.33	153
2. Most teachers found this intervention appropriate.	1	6	4.58	1.22	153
3. This intervention proved effective in meeting its purposes.	1	6	4.48	1.32	153
4. I would suggest the use of this intervention to other teachers.	1	6	4.57	1.32	153
5. The intervention was appropriate to meet the school's needs and mission.	1	6	4.49	1.36	153
6. Most teachers found this intervention suitable for the described purposes and mission.	1	6	4.46	1.32	153
7. I used this intervention in the school setting.	1	6	4.75	1.23	153
8. This intervention did not result in negative side-effects for the students.	1	6	4.62	1.32	153
9. This intervention was appropriate for a variety of students.	1	6	4.61	1.29	153
10. This intervention was consistent with those I have used in school settings.	1	6	4.61	1.21	153
11. The intervention was a fair way to fulfill the intervention purposes.	1	6	4.64	1.28	153
12. This intervention plan was reasonable to meet the stated purposes.	1	6	4.6	1.29	153
13. I liked the procedures used in this intervention.	1	6	4.48	1.33	153

14. This intervention was a good way to meet the specified purpose.	1	6	4.53	1.29	153
15. The monitoring procedures were manageable.	1	6	4.32	1.33	153
16. The monitoring procedures gave the necessary information to evaluate the plan.	1	6	4.48	1.29	153
17. Overall, this intervention was beneficial for the students.	1	6	4.6	1.34	153